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The above General FRONTISPIECE elegantly Engraved by M. TAYLOR, Represents to the Public that the following New and Complete Body or System of Natural History is not confined to the Natural History of any particular Country or place, but that it pursues the pleasing Subject throughout the WHOLE WORLD at large, and traces the History of all Animals, Vegetables, Minerals, the Theory of the Earth, &c. from the Creation to the present Time!

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Being a Grand, Accurate, and Extensive  
**Display of Animated Nature.**

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Accurate Descriptions and faithful Histories of all the several Classes of ANIMALS, which inhabit  
The AIR, the EARTH, and the WATER, in the several Parts of the World.

Including an authentic Account of all the infinite Variety of

BEASTS, BIRDS, FISHES, REPTILES, INSECTS, and AMPHIBIOUS CREATURES, such as FROGS, LIZARDS, SERPENTS, &c.  
And other ANIMALS, too numerous to mention in a TITLE PAGE.

Comprehending also, a General and very particular Account and Description of all Kinds of

VEGETABLES, FOSSILS, SHELLS, MINERALS, &c.—and a Theory of the EARTH in general.

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RESINS, GUMS, concreted JUICES, &c.

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Assistance of Microscopes.

W H E R E I N

The CHARACTERS, QUALITIES, and FORMS of the several Creatures are described, the NAMES by which they are commonly known, as well as  
those by which different AUTHORS have called them, are explained; and each is carefully reduced to the proper CLASS to which it naturally belongs.

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All the valuable Discoveries and Observations of former Writers on the Subject, and Collectors of NATURAL CURIOSITIES; namely,  
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NEW COMPLETE AND IMPROVED BODY

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# P R E F A C E.

**N**ATURAL HISTORY, whether we consider the amazing variety with which it abounds, or that order and uniformity which it points out in the works of the Great Creator, may be considered as a spacious field, over which the eye of curiosity ranges with incessant delight, the attentive examiner expatiates with progressive improvements, and where taste, while she gathers the choicest flowers of Literature, is entertained with the most pleasing ideas. This captivating science includes every object which the whole universe presents to our view; nor, on this extensive, fertile, and enchanting ground, does the assiduous enquirer, in his researches, ever labour in vain. We reason here, from what we know, and discoveries, equally useful to individuals, and the public, are the result of a diligent enquiry. Many other sciences terminate frequently in doubt, or rest in bare speculation; but here, every step is marked with certainty. Upon a transient view of the works of nature, our admiration is excited; her numerous productions fill us with astonishment; her art, her mechanism, her infinite resources, nay, even her irregularities, afford an amusement not less rational than it is pleasing. The various wonders alone of the animal, the vegetable, or the mineral world, exceed all powers of computation. The hand of the Almighty seems to have formed, not one determined number, one settled chain of species, but, with a diffusive power, to have spread at once a world of beings, a perpetual alternative of destruction and renovation. And, in the contemplation of the objects of Natural History, besides the benefits resulting to human society, our veneration by degrees is exalted towards the first prime agent, or great cause of such wonderful effects, who did not bestow so much workmanship upon his creatures, to be looked upon with a careless, incurious eye, especially to have them slighted, or contemned: and since the works of creation are so many demonstrations of infinite wisdom and power, they ought to be admired by the rational part of Nature's Works, as manifestations of divine glory; while, at the same time, they should serve us as so many arguments, exciting us to a constant fear of God, and a steady obedience to all his laws.

The Study of Natural History, and the improvements made in this science, have been the laborious employment both of the past and present ages: Natural History has always been recommended by the learned, and admired by all mankind, as the hand-maid, or rather mistress of the arts. But though, from the earliest times, this noble subject has employed the pens of eminent writers, both in our own and foreign countries, yet it is but lately that it began to dawn in these kingdoms; and then a contracted commerce could not furnish the lights or materials we now enjoy; nor have the genius of earlier investigators, nor the industry of modern authors, understood or copied nature in a clear and comprehensive manner; nor have they ranged their indigested matter in that form, as to render the whole of their systems distinct and perspicuous. In these works, which have escaped the wreck of time, a vast design, and extensive knowledge, are apparent; nevertheless, things are considered only in general lights, and the subject is left when it becomes too minute, or remote from their confined point of view. Many excellent writers have also failed in the exactness of their descriptions. There are creatures described by the naturalists of antiquity, which are so imperfectly characterized, that it seems difficult to determine to what animals now subsisting we can refer the description. As to the laborious and voluminous productions of some modern writers, they are insupportably tedious and disgusting, being filled with uncouth terms of art, unnecessary Latin quotations, and unimportant digressions. They abound with a studied display of learning, as if the patience of readers could never tire, or as if the precious moments of time were to be spent only in reading the laboured compositions of pedantic writers, without the least regard to profit or delight. Are these to be expected from dry unentertaining theories? And of what use are classical arrangements without the necessary brevity and perspicuity? By a minute attention to characteristic peculiarities, and nominal distinctions of things, without regard to their instincts, habits, properties, and uses, they omit those circumstances that constitute the most interesting and instructive parts of natural knowledge: on the other hand, by multiplying technical terms, Latin distichs, and unnecessary divisions, instead of impressing the mind with distinct ideas, some only confound it, and, instead of order, introduce confusion: thus making the language and study of the science more difficult than the science itself. With respect to the less exceptionable treatises on this subject, we may with strict truth observe, that they are either mere abstracts from original writers, with all their defects, or too voluminous to be read, or too expensive to be purchased: and after all their indefatigable researches in the lumber-room of antiquity, many particulars, though of the greatest utility, have been totally neglected, or very superficially considered. Indeed, the universe is so spacious a field, and contains so extensive a plan, that after a revolution of successive enquiries, a part of it will be found still to remain uncultivated, and a part unnoticed in its native wildness, without having recourse to New Discoveries, which, in different periods of time, if we may be allowed the expression, enlarge the boundaries of the natural world, and mark out a new employ for the powers of investigation. In the course of these remarks, we have not even glanced at some recent compilations before us, which have been puffed off in a very pompous manner by certain adventurers, in order to take the advantage of credulity. They are, indeed, too contemptible to come under the eye of criticism, being void of excellencies, and replete with errors, though offered to the public on very extravagant terms. To correct the errors, and fill up the deficiencies of former plans, are sufficient reasons for a New and Complete Body or SYSTEM of NATURAL HISTORY, especially such a one as the present, which will unite Elegance and Cheapness; which will be very extensive, and calculated at once to entertain and improve. And as all the former productions, in this delightful science, are too credulous, too prolix, or too incomplete, we are persuaded that this New and Extensive Work, which will be written in a manner different from all that have appeared on the subject, properly executed throughout in every respect, enriched with all the modern discoveries, and sold on so moderate terms as only sixty sixpenny numbers (each containing more than is usually sold at one shilling) will meet with encouragement from the public at large, and the approbation of our very numerous friends and correspondents, who have prevailed upon us to undertake this great, this important, this useful, this valuable Work. From having exerted our abilities with unremitted assiduity in prior performances, and from having fulfilled, with a scrupulous integrity, prior engagements, we shall enter, with some degree of confidence, This Garden, tempting with delicious fruit; this wild, where flowers and weeds promiscuous shoot; this grand survey of the earth, the sea, the firmament, and animated nature, as far as human conception and labour have penetrated, and capacious as the globe itself. Here, our Readers, companions in delight, but not in the toil, will see displayed the beauties of the Vegetable World, without the fatigue attending travelling, or the dangers inseparable from navigation.—They will have a view of the Four-Footed part of the creation, without a single alarm from savage animals, voracious fishes, or noxious insects.—They will be led, by short and pleasant excursions, to the extent of Terrestrial Continents; and in their way contemplate, without one painful idea—the height of Mountains—the variation of Winds—the causes of Earthquakes—the changes in Volcanoes—the formation of Caverns—the nature and qualities of different Soils, Marshes,



Marshes, Lakes, Running Waters, Perpendicular Heights, &c. And to make every moment of time replete with increasing pleasure, we shall, for their amusement, bring from its interior parts all kinds of Minerals and Fossils—Petrified Shells—Subterraneous wood, coal, water, and the various materials of which the globe is composed.—With the same view, the expanse of ocean, even to the limits of the South-Sea, and all its numerous natural productions, will be diligently explored—Fishes—Plants—Water-spouts—Currents—Salt Lakes, &c.—will be described, with precision, and in a pleasing and satisfactory stile adapted to the nature of the subject.—And while we thus range in the delightful walks of nature, we shall be induced, when the evening shades prevail, to look up to the spangled canopy, and take a view of those bright orbs, which, as they roll on, proclaim to us the divine hand that made them—

“ Soon as the evening shades prevail,  
The moon takes up her wondrous tale,  
And, nightly, to the list’ning earth,  
Repeats the story of her birth,  
While all the planets round her roll,  
And spread the truth from pole to pole;  
For ever singing, as they shine,  
The hand that made them is divine.”—ADDISON.

What an awful sense of the adoration due to the Great Creator must a prospect of this part of the universe inspire! The heavens declare the glory of God. It is the duty of man, made after his image, to proclaim it; nor is it our ambition to be ranked among some of the greatest philosophers, of whom it may be said, while they are describing the wonderful works of God—“ God is not in their thoughts.”

This is but a short sketch, or mere outline of a work, intended to be copious, without being expensive. To enumerate particulars in due order, in this prefatory address, would be tedious, and exceed the limits of a preface. The number of beings endued with life seem, at a cursory view, to be infinite: the forest, the water, the air, teem with animals of different kinds; almost every vegetable, and every leaf, have millions of minute inhabitants, each of which is destined to perform his allotted task. But the active and inquisitive mind is not intimidated with the immense variety; it engages in the laborious employ of numbering, grouping, and classing all the various kinds of beings, animate or inanimate, that fall within its notice; continually discovers new relations between the several parts of the creation; acquires a method of considering them at a time under one point of view; and, at length, perceives that the variety, though great, is not so inscrutable, as might at first be imagined. But one difficulty a faithful Naturalist, or Zoographer, must labour under is, that of separating the imperfections of other writers from their merit, and, particularly, supplying their deficiencies. We have scarcely an author who has made a tolerable attempt toward distributing the Fossils into method, and forming the study of them into a science; not even the arrangements of Dr. Woodward, in his catalogues, by any means approach toward a perfect system. What has been written on the subject of Minerals, serves only to shew how little the authors were acquainted with them, a great part of which, even at this time, lie unnoticed, and unnamed. The same may be said of the histories of Plants, or what is termed Botany, a large portion of which, particularly what relates to the lesser class, commonly called imperfect plants, has either been untouched, or not disposed in any degree of order. As in regard to these, so with the Animals, the lesser and invisible ones, without the assistance of glasses, called Animalcules, and Insects, have been almost totally disregarded: but certainly their want of magnitude is not a sufficient reason for excluding them from their rank among animated beings; yet authors of NATURAL HISTORY in general, even of the latest period of time, either from indolence, or from not having glasses, or from a careless neglect, have passed them over in silence. Indeed, it requires a series of experiments to discover the characters of the minute part of the creation, to which the writers of the following System of NATURAL HISTORY have paid a strict attention. We have a good foundation in our hands, and hope to convince the world that we want not application in raising and finishing the superstructure.

In saying thus much, and by the above observations, we cannot magnify our subject, or render its importance to society greater than it really is: nor is it our intention to raise expectations in our readers, which it may not be in our power to satisfy; for our design is not to amuse the ear with well turned periods, or the imagination with borrowed ornaments; but, as faithful guides, it is our duty to let them know, we are well acquainted with the road, and the several parts of the country, through which they intend to travel. We have not neglected any resources, whereby we might obtain materials for making this Body of NATURAL HISTORY Extensive and Complete. To this end, the discoveries of our late circumnavigators have been carefully attended to, every author has been consulted for authentic information, heaps of lumber have been turned over to detect falshood, travellers, whose judgment and veracity we could rely on, have been consulted; so that it may reasonably be supposed, many parts of this New System of NATURAL HISTORY have exhausted much labour in the execution; that we have been less liable, than superficial observers, to be imposed on by the hear-say relations of credulity; and we are fully persuaded, the descriptions of every object which has come under our consideration, will be found as clear and satisfactory as possible: yet, after all, Public Judgment alone can stamp a value on our endeavours to instruct and entertain; but whatever that decision may be, we shall still have the pleasing satisfaction, at the close of our labours, to know, and without vanity to say, we have discharged, with fidelity, our duty, and left the Science of NATURAL HISTORY, in a better state than we found it. Our work will be illustrated and embellished with a great variety of SUPERB COPPER-PLATES, representing several thousand objects in NATURAL HISTORY, such as Birds, Beasts, Reptiles, Fishes, Insects, Amphibious Creatures, and other Animals, Vegetables, Shells, Minerals, Plants, Fossils, &c. &c. &c. all most accurately drawn from nature, and elegantly engraved by the very best artists of LONDON and PARIS.

It is necessary to observe that several *vain attempts* have been made to deliver *coloured prints* with some Works of this kind, but the absurdity and impracticability of this is now sufficiently obvious; for upon examination, not even two impressions of the same plate, and these coloured by the same hand, can be found alike, nor one of them strictly according to nature. However, to remedy all former defects, and to furnish all ranks of people with an opportunity of perusing, at a cheap and easy rate, so desirable a subject, we beg leave humbly to offer this New, Complete, and Universal Body or System of NATURAL HISTORY, as the very best, and most perfect work of the kind, and at so reasonable a price, as cannot fail to surprise every purchaser. Indeed Mr. Hogg, (to whom we have intrusted the publication) has engaged in the present instance (as he has hitherto performed with regard to his other valuable works) to be content with a moderate profit, and deliver to the public more for Sixpence than others do for a Shilling.

GEORGE HENRY MILLAR.

N. B. As the Copper-Plates will be delivered in the course of the publication promiscuously, just as they are received from the several capital Artists, our numerous Subscribers are requested to observe, that proper Directions for placing the whole, will be given at the conclusion of the work.



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A

NEW, COMPLETE, and UNIVERSAL BODY, or SYSTEM of

# NATURAL HISTORY;

Being a Grand, Accurate and Extensive

## Display of Animated Nature:

A Work far Superior to every other Publication of the Kind hitherto Published, or now Publishing, as it is calculated on a Plan in which Cheapness and Elegance will be united.

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### B O O K I.

*A New and Complete History and Description of*  
**QUADRUPEDS, or FOUR-FOOTED ANIMALS.**

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### I N T R O D U C T I O N.

NATURAL HISTORY requires method, arrangement, or classing its several parts, without which little progress can be made in the science. It is this alone which fixes the attention to one point, and, by slow degrees, causes it to leave not a single object in the universe unexplored. All former writers, of any acknowledged ability on this subject, have adopted some manner of grouping the several parts of nature; and each one, in this particular, has followed his own ideas, adopted such classical divisions, and placed that class of particulars first, which he conceived to be most interesting, or most entertaining. Some have begun with the history of fossils; others with theoretical dissertations, general systems, and different particulars in the works of creation. For our parts, we think the Animal World, in point of importance, deserves the lead; and of all four-footed animals, we have given the pre-eminence, in this New and Extensive Work, to the HORSE, being a noble animal, admired for his beauties, and whose use is acknowledged in every country. If we take a comparative view of the various animals of the globe, we shall be convinced, that, next to man, quadrupeds demand the foremost place; and therefore we have made them the first objects of our consideration. The similitude between the structure of their bodies and our own, those instincts which they seem to enjoy in a superior degree to the other classes that inhabit and live in air, earth, or water, their constant services to man, or the unceasing enmity they bear him, all render them the most interesting parts of animated nature, and entitle them to our first attention. It is probable, that, in the early ages of the world, all animals were nearer an equality with us than at present. Man, when almost a savage himself, was but ill qualified to civilize the forest. While he continued naked, unsheltered, and unarmed, every wild beast was a formidable rival, and the destruction of such was the first employment of heroes. But when he began to multiply, and arts to accumulate, he soon cleared the plains of his most noxious

No. 1.

rivals; In time an empire was established by him over all orders; a part was taken under his protection and care, while the rest found a precarious refuge in the solitary wilderness or howling desert. But now, quadrupeds, instead of rivals, are become the assistants of man; to them he allots laborious employments, and finds them content with the smallest retribution.

One obvious and simple division of quadrupeds, is into the domestic and savage; by the former we mean, such as man has taken into friendship, or reduced to obedience; by the latter, those who still preserve their natural independency and ferocity. The savage animal retains at once his liberty and instinct; but man seems to have changed the very nature of domestic animals by cultivation. They have few desires but those which man is willing to grant them. And not only native liberty, their very figure is changed. What an immense variety in the ordinary race of dogs, or horses; yet the whole has been effected by climate and food, seconded by the arts and industry of man. Thus, in some measure, we see nature continually under restraint, in those creatures we have taught to live about us; but it is otherwise when we come to examine the savage tenants of the forest, or the wilderness; there every species preserves its characteristic form, and is strongly impressed with the instincts and appetites of nature. The more remote from mankind, the greater seems to be their sagacity; but as soon as man intrudes upon their society, their spirit of wisdom and industry ceases; and not only this, their courage also is repressed by the vicinity of man. Wherever he approaches, the savage beasts retire; and it is thought, that many species of animals had once birth, which are now totally extinct. The Elk, for instance, which we are certain was once a native of Europe, is now no longer, except in Canada. It is in the forest, therefore, and remote from man, that we must look for those varieties, instincts, and amazing instances of courage, and cunning, which quadrupeds exert in a very high degree. Their various methods of procuring subsistence, may well attract

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our admiration. The rapacious animal is, in every respect, formed for war; yet the various kinds make their incursions in very different ways. The lion and tyger pursue their prey by the view alone, and for this purpose they have a piercing sight. Others hunt by scent; while some lie in wait, and seize whatever comes near them, or they are able to overpower.

In all animals their heads differ from each other, and are generally adapted to their manner of living. In some the head is sharp, the better to facilitate the turning up the earth, in which their food is hid. It is long in others, as in dogs, who find out their prey, and pursue it by the scent. In some, as in the lion, it is short and thick, to give strength to the jaw, and the better to qualify it for combat. Those which feed on grass, are enabled to hold down their heads to the ground by a strong tendon, which extends from the head to the middle of the back. The teeth of carnivorous animals differ, in every respect, from those which feed on vegetables. In the latter, they seem entirely calculated for gathering and bruising their simple food, being edged before, and fitted for cutting, but made broad, for pounding towards the end of the jaw: whereas, the teeth of carnivorous animals are sharp before, and appear formed rather for holding than dividing. They serve as grindstones in the one; and in the other as weapons of defence. In both, however, the surfaces of the grinding teeth are unequal, with cavities and risings which tally with each other, when the jaws are brought into contact. These inequalities better serve for grinding the food, but they grow smoother with age, which is the reason why old animals take a longer time to chew their food than those in the prime and vigour of life. The legs and feet of quadrupeds are exactly suited to the motion and exercise of each animal. In some they are made for strength only, in order to support a vast unwieldy frame, and are neither flexible, nor beautifully formed. The elephant, the rhinoceros, and the sea-horse, have legs resembling pillars: whereas deers, hares, and other animals, whose safety depends upon their flight, have slender and nervous legs. The means of safety are indeed superior to those of offence, and it is only by patience, perseverance, and industry, that the pursuing animal can succeed; and were it not for this advantage, they would soon become the prey of every carnivorous animal. The feet of some, that feed upon fish alone, are fitted for swimming: the toes of these animals are joined together with membranes like those of geese and ducks, by which they swim with great rapidity. Animals that lead a life of hostility, and devour others, have their feet armed with sharp claws, which some of them can sheath, and unsheath, at pleasure: on the contrary, peaceful animals have generally hoofs, which serve some of them as weapons of defence, and are more convenient to all for traversing extensive tracts of country, than the claw-feet of their hostile pursuers. The stomach is generally proportioned to the quality of the animal's food, or the ease, or difficulty of obtaining it. In those who live upon flesh, and such nourishing substances, it is small and glandular, affording such juices as are best adapted to digest and macerate its contents. On the contrary, such animals as feed entirely upon vegetables, have a capacious stomach; and ruminating animals, or such as chew the cud, have four stomachs; all which serve to prepare and turn their gross food into proper nutriment.

Nature seems to have fitted all creatures for procuring food, though never without a proper exertion of their strength, or industry. Large animals of the forest, such as the elephant and lion, want swiftness, and a distinguishing scent for catching their prey, but have strength to overcome it: others, who want strength, such as the wolf and the fox, make it up by their cunning; and those, to whom nature has denied both strength and speed, follow by the smell, and, at last, overtake their prey by perseverance. Few wild animals seek their prey in the day-time; but about night

the forest echoes with a variety of different howlings. That of the lion resembles distant thunder; the tiger and leopard's notes are somewhat more shrill, but more hideous; while the jackall, pursuing by his scent, barks somewhat like a dog, and hunts in a pack in the same manner. But it is the most usual way with larger animals, to hide and crouch near some path frequented by their prey, or some water where cattle come to drink, and, with a bound, seize them instantly. When this is effected they devour it in a most voracious manner, often bones and all, and then retire to their retreats, continuing inactive till the calls of hunger again excite their courage and industry. But as all their methods of pursuit are counteracted by their prey, with all the arts of evasion, in this manner they often continue to range without success, supporting a life of famine, and fatigue, for eight or ten days successively. Beasts of prey seldom devour each other, nor can any thing, but the greatest degree of hunger, induce them to it. What they chiefly seek after is the deer, or the ox; which, when caught, they first suck the blood, and then devour the carcass; yet there are antipathies among the rapacious kinds, which render them enemies to each other, even though no ways instigated to it by hunger. The elephant and the tyger, the dog and the wolf, are mortal foes, and never meet without certain death.

Such are the beasts of the forest, possessed of various methods to seize, conquer, and destroy; nor are their destined prey less sagacious to escape destruction. Some find protection in holes, wherein nature has directed them to bury themselves; some owe their safety to their swiftness; and those who possess neither of these advantages generally herd together, and endeavour to repel invasion by united force. Some animals, that feed upon fruits, which are to be obtained only at one time of the year, fill their holes with variety of plants, and lie concealed during the hard frosts of the winter, contented with their prison, which affords them plenty and protection. These holes are so artfully constructed, that there seems the design of an architect in the formation. In general, there are two apertures, by one of which the little inhabitant can always escape, when any enemy is in possession of the other. Such are the contrivances of the badger, the hedge-hog, and the mole. Many creatures avoid their enemies, by placing a sentinel to warn them of the approach of danger: this duty they perform generally by turns, and they have modes of punishment for such as have neglected their post, or been unmindful of the common safety. These are some of the efforts exerted by the weaker quadrupeds to avoid their pursuers, and they are attended generally with success. These are the efforts of instinct for safety, which are, in general, sufficient to repel the hostility of instinct only. Man is the only creature against whom their little arts can scarce prevail. Such as he has chosen to protect, have calmly submitted to his dominion; such as he has thought proper to destroy, engage in an unequal war, and their numbers are daily decreasing.

In all countries where the men are most barbarous, the animals are more cruel and fierce. Africa has ever been remarked for the barbarity of its men, and the ferocity of its beasts; its crocodiles and its serpents are as much to be dreaded, as its lions and leopards; their dispositions seem entirely marked with the climate, and bred in an extreme of heat, they shew a peculiar savageness, invincible to the force or cunning of mankind. The largest and fiercest animals are found in Africa, where the plants are extremely nourishing; and, perhaps for a contrary reason, America does not produce such large animals as are found in the antient continent. It is however certain, whatever be the reason, that although America exceeds Europe in the size of all kinds of reptiles, it is far inferior in its quadruped productions. Its beasts of prey have also less strength and courage than those in other parts of the world. The lion, tyger, and leopard of America,



are neither so fierce nor so valiant as those of Africa and Asia. But although the quadrupeds of America be smaller than those of the antient continent; they are much more numerous; for it is a rule that obtains through nature, that the smallest animals multiply the most. The wisdom of providence in making formidable animals unprolific is obvious; for had the elephant, the rhinoceros, and the lion, the same degree of fecundity with the rabbit, or the rat, all the arts of man would be unequal to the contest, and we should soon perceive them become the tyrants of those to whom the Great Creator gave power and dominion over the beasts of the field. He has therefore wisely made it an established order of nature, that the larger creatures which bring forth a few at a time should seldom produce their species till they have nearly acquired their full growth: on the other hand, those which bring forth many, engender before they have arrived at half their natural size. In proportion to this also most animals continue the time of their pregnancy. The mare goes eleven months with foal; the cow nine; the wolf five; and the bitch nine weeks. The intermediate litters are generally the most fruitful in all; the first and last producing the worst of the kind, and fewest in number. Whatever may be the natural disposition of animals at other times, they all acquire new courage and fierceness in defence of their young: no dangers can drive them from the post of duty; even the mildest begin to exert their little force, and threaten the invader. Where there are no hopes from resistance, they incur every danger, in order to rescue their young by flight, and retard their own expedition by providing for their little ones. At such times, they who have force, and subsist by rapine, are terrible indeed! No obstacles can stop their ravage, no threats can terrify them. The lioness then appears more daring than even the lion himself: men and beasts she attacks indiscriminately, and carries all she can subdue reeking to her cubs, whom she thus early inures to slaughter. But the first aliment of all quadrupeds, is milk, which is at once a liquor both nourishing, and easily digested; this being, in carnivorous animals, in much less quantity than others, the female often carries home her prey alive, that its blood may supply the deficiencies of nature in herself.

The courage of animals in the protection of their young, is not greater than their sagacity in chusing such months for bringing them forth, as afford the greatest quantity of provision, suitable to the age, and appetite, of each peculiar kind. They, in general, couple at such times, as that the female shall produce in the mildest seasons, such as the latter end of spring, or the beginning of autumn; the wolf, for instance, brings forth her young in April; and the mare foals about the beginning of May. But those animals which treasure up provisions for winter, as the beaver and marmotte bring forth in January; for which severe season they have provided the necessary supplies. However, among some of the domestic kinds, we may make them breed whenever we please, by feeding, and keeping them from the rigour of the climate, and season. By this contrivance, lambs are produced all the year round. Their choice of situations in bringing forth is not less worthy of our admiration. Among the most rapacious kinds, the female takes the utmost precautions to conceal from the male the place of her retreat; which, when pressed with hunger, would otherwise devour her cubs. She therefore seldom strays far from the den, and never returns while the male appears in view. Animals of tender constitutions are particularly careful to provide a place of warmth as well as safety for their young: the rapacious kinds bring forth in the thickest woods; the ruminant, with the various species of lesser creatures, chuse some hiding place in the neighbourhood of man; some a hollow tree; others dig holes in the ground; and all the amphibious kinds rear their young near the water, and accustom them early to either element. But, there is one class of animals which leave their brood to chance

alone, and their own early instinct, without a parent either to protect or teach them the arts of subsistence. These are of the oviparous kind, or such as are produced from the egg, as the lizard, the tortoise, and the crocodile. Of all animals, these are the most prolific, bringing forth often more than two hundred at a time; but as the offspring is more numerous, the parental care is less exerted; for they bury their eggs in the sand, and the heat of the sun alone brings them to perfection. As soon as hatched, they immediately make to the water; but the young brood, in their passage thither, have innumerable enemies to fear. Birds of prey that haunt the shore, beasts, and even the parent animal, by a strange rapacity, are said to reduce their numbers. It may be observed, that the more imperfect each animal is, the sooner it arrives at its greatest state of perfection. The lizard is capable of providing for itself as soon as hatched; the otter swims in quest of food at one day old; but the dog takes a longer time; and the horse and the lion are still slower in their advances.

But of all the self-moving beings endued with life, *Man* superior walks amidst the glad creation: yet we have not placed him foremost in our catalogue, because he may be considered as different from all kinds of animated beings, having as it were two natures, the animal and the rational, both composed of different principles, and contrary in their action. The one, called the Soul, is a pure light, accompanied with serenity and peace; a salutary source, whence flow science, reason, and wisdom; the other, called the Body, is purely material, a false light, that never shines but in the midst of darkness and hurricane; an impetuous torrent fraught with error and passion. There is a striking resemblance between quadrupeds and man in many respects; and by comparing their internal structure with our own, we shall perceive they enjoy several advantages in common with us, above the lower tribes of nature. They are, like us, placed above the class of birds, by bringing forth their young alive; like us, they are also placed above the class of fishes, by breathing through the lungs; like us, they are placed above the class of insects, by having red blood circulating through their veins; and, like us, they are different from all the other classes of nature, being either wholly or partly covered with hair. They are likewise less liable to be changed by the influence of climate and food. The figure of animals may be considered as a kind of drapery, which human assiduity may put on or off: in man, indeed, the drapery is almost invariable; in quadrupeds it admits of some variation; and, if we descend to the inferior classes of animal existence, the variety may be made still greater. Though quadrupeds are, in general, divided from the various kinds around them, yet some are so equivocal, that it is difficult to determine whether they deserve to be ranked in the quadruped class, or placed with those below them. The bat, for instance, approaches the aerial tribe, and might by some be ranked among the birds. The armadilla, being covered with a shell, might be referred to the tribe of snails or insects; the seal and the morse, being furnished with fins, and residing almost constantly in the water, might be ranked among the fishes. But notwithstanding there is such infinite variety in quadrupeds, they all seem well adapted to their respective stations, and probably enjoy a state of pleasurable sensations adapted to their nature. We may suppose the sloth, that is two months employed in climbing up a single tree; or a mole, who cannot distinctly see on account of the smallness of its eyes, are miserable and helpless creatures; but their life is perhaps a life of luxury: the most pleasing food is easily obtained, and, as they are abridged in one pleasure, in those that remain their enjoyment may be doubled. At worst, the inferior kinds of animals have only the torments of immediate evil to encounter, which is transient and accidental; but man has two sources of calamity, that which he suffers, and that which he foresees or dreads; he would therefore



therefore be the most miserable of all beings, if his hope, his happiness, and his rewards, were to be only in this life. Here, in imitation of Count de Buffon, and other philosophers, members of royal societies, we might entertain ourselves with many curious speculations, such as whether brutes have souls? whether they have reason? whether they have memory? These, and propositions of the like nature, are topics that may employ the speculative, but can never recompence the enquiry. They are questions concerning which we may form doubts, but can never have them resolved, till brutes themselves find language to inform us, and farther enlighten our philosophy. A mind, willing to employ itself in vain conjectures, can never want subjects upon which to expatiate: but it is sufficient for us, that every thing we see is good, and that all

those good things have been granted for our enjoyment. All theories are embarrassed with insurmountable objections, and only serve to shew, that an immoderate pursuit of subjects hidden from us only leads to the maze of uncertainty; in such investigations, every last opinion serves to overturn the preceding, while itself only waits to be overturned by some succeeding speculation, more pleasing, because new. Happy is it for mankind, that, in modest nature, the great I AM has concealed her secret operations from the eye of rash presumption; and that the most intricate enquiries are generally the most useless: let it suffice us, therefore, to examine the form, qualities, use, and not the cause of things; and to know that the God of providence, in his numerous productions, acts with uniformity and success.

## C H A P. I.

*Containing a descriptive Account of FOUR-FOOTED ANIMALS, with an undivided Hoof, such as the HORSE, the ZEBRA, the ASS, the MULE, the ONAGER, and the UNICORN.*

### NATURAL HISTORY of the HORSE.

**T**HIS spirited and haughty animal is the noblest conquest made by man; for he shares with him the fatigues of war, and the glory of the combat. Equally intrepid as his master, the horse sees the danger and braves it: inspired at the clash of arms, he is animated with the same ardour. He feels pleasure also in the chace: in tournaments, and in the course, he is all fire; but equally tractable as courageous; does not give way to his impetuosity, and knows how to check his inclinations: he not only submits to the arm that guides him, but even seems to consult the will of his rider; and, always obedient to the impressions which he receives from him, presses on, moves gently, or stops, and only acts as he pleases. This majestic animal is in strength and fierceness equal to any quadrupeds, yet is easily tamed, and made fit for our purposes, either of draught or carriage; scarcely any creature excels him in swiftness, nor hardly any in beauty. His head is long; his eyes large and prominent; his ears erect; his neck thick, elegantly formed, and decorated with a mane of long hair, like that of the lion; his body is rounded and finely turned; his legs are strong, without being bulky; his tail is long and hairy all the way; his fore teeth are six; the upper ones incurvated, and the inferior prominent; the canine teeth are on each side separated from the other by a space; the teats are two, situated in the groin. Such is the horse, which from the earliest ages has been improved, exercised, and broke to the service of man. His education commences with the loss of his liberty, and by constraint it is finished. To have a perfect idea of this noble animal, in his native simplicity, we must not look for him in the pastures or the stables, but in those wild and extensive plains where he has been originally produced, where he ranges without controul. In this happy state of independence, and, rioting in all the variety of luxurious nature, he disdains the assistance of man, which tends only to servitude. In those boundless tracts, whether of Africa or New Spain, he is not incommoded with the inconveniences to which he is subject in Europe. His wants are supplied with the continual verdure of the field, and the climate, which is a stranger to winter, and suits his constitution, adapted naturally to beat. His enemies are few; for none but the larger animals will venture to attack him, any one of which he is singly able to overcome; but he secures his safety in society, for in those countries

the wild horses always herd together, and are often seen feeding in assemblies of five or six hundred. As they are harmless animals, they are satisfied to remain entirely upon the defensive. The pastures supply them abundantly with food, and all other precautions are purely for their security in case of a surprize. Whenever they sleep in the forests, one among their number performs the office of centinel, to give notice of any approaching danger; and this office they execute by turns. If, while they are feeding by day, a man approaches them, their centinel walks boldly towards him, as if he meant to examine his strength, or to intimidate him from proceeding. If the man advances within pistol shot, the centinel alarms his fellows by a loud kind of snorting, upon which they all take the signal, and fly off with the rapidity of the wind, their faithful centinel always bringing up the rear. All this may be observed in young horses brought up together, and which are led together in droves. They live in peace, because their appetites are simple and moderate; their manners are gentle, and their qualities social; they seldom show their ardour and strength by any other sign than emulation; they endeavour to be foremost in the course, are animated by danger, and will defy one another to cross a river, or leap a ditch, and those, which in these natural exercises set the example, are often the most docile and gentle, when once broke.

Although the horse is found in almost all countries, it is evident that the colder climates do not agree with his constitution; his form is altered there, and he is found not only diminutive, but ill-shaped. We have the testimony of antient writers, that there were wild horses once in Europe; at present, however, they are totally brought under subjection, and even those in America are of a Spanish breed, which were sent thither upon its first discovery, and, becoming wild, have spread over all the south of that vast continent, almost to the streights of Magellan. These are, in general, a small breed of about fourteen hands high, and indifferently shaped; they are easily tamed, and if they recover by any means their native liberty, they never become wild again, but know their masters, and obey their call. But American horses cannot properly be ranked among the wild races, being originally bred from such as are tame. We must look into the old world for this animal, if we would see him in a true state



state of nature; in the extensive deserts of Africa, in Arabia, and in those vast countries that separate Tartary from the more southern nations. Heroditus says, that on the Banks of Hypanes in Scythia, there were wild horses which were white. Leon, the African, assures us, that in the remotest parts of Numidia, he saw a colt with a curled mane, the hair of which was white. Marmel confirms this fact, asserting, that some horses are found in the deserts of Arabia and Libia of an ash colour, others white, and neither dogs nor tame horses can equal them in swiftness. Large assemblies of these animals are seen wild among the Tartars. To the north of China are also great numbers of them, but they are weak and of a timid breed. At the Cape of Good Hope they are vicious and untameable. In Africa, the wretched inhabitants are either ignorant of their uses, or know not how to tame them. They seem to consider the horse rather as dainty food, than a useful creature, capable of assisting them either in war or labour; for whenever the natives of Angola or Caffraria catch one of these creatures, they butcher him for food. But of all the wild horses, Arabia produces a breed the most beautiful, generous, swift, and persevering. Their colour is brown, their mane and tail very short, their hair black and tufted. Their swiftness is incredible. The method of taking them is by traps concealed in the sand, which entangling their feet, the hunter approaches them, and either kills or carries them home alive. The inhabitants in the island of St. Domingo, make use of nooses to catch the wild horses; but by this method they are strangled, unless the hunter comes time enough to their assistance, who instantly secures them by the body and legs, and fastens them to trees, where they are left for two days without either food or drink. This experiment is sufficient to begin to make them tractable, and in time they become as much so as if they had never been wild. At present, however, the horses thus caught are very few: the value of Arabian horses, in every part of the world, has thinned the deserts of the wild breed; and there are not many to be found in those countries, except such as are tame.

We are informed by historians, that the Arabians first began the management of horses in the time of Sheque Ismael. Before that period they wandered wild along the face of the country, useless and neglected; the natives first began then to tame their fierceness, and to improve their beauty: they now possess a race of the most beautiful horses in the world, with which they drive a considerable trade, and adorn the studs of princes at immoderate prices. Almost the poorest person, among those people, is provided with a horse. In their ordinary excursions, they generally make use of mares; experience having taught them, that they endure hunger, thirst, and fatigue, better than the horses: they are also less vicious, of a gentler nature, and more harmless among themselves; not being so apt to kick or hurt each other. The Arabians having no other house but a tent to live in, that also serves them for a stable, wherein the husband, the wife, the children, the mare, and the foal, lie indiscriminately together. They never beat their horses; but treat them gently, considering them as friends. The Arabian horses are the handsomest in the known world. They are larger and more plump than those of Barbary, equally well shaped, and easy in their motions. Every morning and evening they are dressed with the greatest care. They have not any food during the whole day, and are permitted to drink only once or twice. At sun-set a bag is hung to their heads, containing about half a bushel of clean barley. They continue eating, at times, the whole night, and the bag is removed early in the morning. In the beginning of March, when the grass is pretty high, they are turned out to pasture, from whence they are taken when the spring is past, and they eat neither grass nor hay during the rest of the year: barley is their only food, except now and then a little straw. Sensible of the great advantage their horses are to the country, the Arabians

have made a law, prohibiting the exportation of the mares; and those stallions that are brought into England, are generally purchased on the eastern shores of Africa, and come round to us by the Cape of Good Hope. They are in general about fourteen hands, or fourteen hands and a half high. Their motions are more graceful, and they are swifter than our own horses; but their speed is irregular, nor can they endure so much fatigue: nevertheless, they are considered as the first and finest breed known, and that from which all others have derived their principal qualifications. It is probable that Arabia is the original country of horses; for there, instead of crossing the breed, they are careful to preserve it entire. In other countries they change continually their races, or their horses would soon degenerate; but, in Arabia, the same blood has passed down through a long succession, without any diminution either of strength or beauty. This race of horses has spread itself into Barbary, among the Moors, and even extended across that vast continent to the western shores of Africa. It has also been diffused into Egypt, and even into Persia. In these countries, the horses generally receive the same treatment as in Arabia, except that they are littered upon a bag of their own dung, dried in the sun, and then reduced to powder.

The horses of Barbary are very proper to breed from: it were only to be wished, that they were of larger stature, they seldom exceeding four feet, eight inches in height. Those in the kingdom of Morocco are the best; next, those of the mountains; the rest of the horses of Mauritania, are of a far inferior quality, as well as those of Turkey, Persia, Armenia; and all the horses of warm countries have the hair shorter than others. In Numidia, however, the race of horses is much degenerated, the Turks having discouraged the natives from keeping their breed up, by seizing upon all the good horses without bestowing upon the owners the smallest gratuity. The Turkish horses are not so well proportioned as those of Barbary: they have commonly the chest slender, the body long, and the legs too thin; they will, however, travel a great way, and are long winded: this is not surprizing, if we do but consider, that in warm countries, the bones of animals are harder than in cold climates; and it is for this reason, that they have more strength in the legs.

The Spanish Genettes hold the second rank after the Barbs. They are low of stature, but plump, well coated, and extremely swift. Their most usual colour is black, or a dark bay. They are all branded on the thigh, or buttock, with the name of the owner, or mark of the stud where they were bred. Those of Upper Andalusia are esteemed the best, though they are apt to have the head too long; but this defect is excused in favour of their excellent qualities: they are courageous, obedient, graceful, haughty, and more supple than those of Barbary, for which advantages they have been preferred as war horses, to those of any other country.

The horses of Italy are not so beautiful now as they were formerly, for the Italians have greatly neglected the breed; nevertheless, the Neapolitans are possessed of some beautiful horses, which they use principally for draught: but, in general, the Italian horses have large heads, and the chest thick; they are restive, and, consequently, not easily managed; which defects are compensated by a noble form, stateliness, spirit, and an easy, graceful motion. They are very fond of prancing, shewy, and excellent for the harness.

The Danish horses are of a large strong make, beautiful in their coats, and preferred to all others for putting into carriages. However the number is but small that are perfectly moulded; for most of them have a thick chest, large shoulders, long and low loins, and a narrow croup. But they are all graceful in their motions, and excellent for either war or state. They are of all kinds of colours; some very whimsical ones; being pied, mottled, like the leopard, or, which are found no where but in Denmark, streaked like the tiger. The horses of Holland are very good for draw-



ing in coaches. The best come from Friezland: there are also some good ones in the provinces of Berges and Juliers. The Flemish horses are greatly inferior to those of the Dutch breed; having almost all large heads, flat feet, and are subject to humours in the eyes: these two last defects are essential ones in their coach-horses.

In Germany, the horses, though originally from Arabian and Barbary stocks, are generally heavy, and short-breathed, therefore not swift enough for hunters, whereas the Hungarian, Transilvanian, &c. are, on the contrary, light and good couriers. The Hussars, who use them for war, split their nostrils, for what purpose we know not, although some assert it is to prevent their neighing in time of battle. It is remarked, that Hungarian, Croatian, and Polish horses have the mark in their mouths during life.

In France are horses of all kinds, but few good ones: the best come from Limousin; they resemble much those of Barbary; and, like them, are excellent for the chace; but they are slow in their growth, require great care while young, and must not be ridden till they are eight years old. Normandy furnishes handsome horses; but they are better for war than for hunting; they have thick coats, and soon arrive to perfection. Many coach horses are brought from Lower Normandy to the continent; they are lighter than those of Holland. Franche Comte, and the country round Boulogne, furnish very good draught horses. Those in France are, in general, defective, in having their shoulders too thick, instead of which the Barbary horses are commonly too narrow.

In Great Britain, the breed of horses is as mixed as that of its inhabitants. From the frequent introduction of foreign horses, we can boast of a greater variety than any other country: few other kingdoms produce more than one kind; but ours, by a judicious mixture of the several species, by the variety of our soils, and by the superior skill in management, may triumph over the rest of Europe, in having brought this noble animal to the highest degree of perfection. An English horse is known to excel the Arabian in size and swiftness; to be more durable than the Barb; and more hardy than the Persian. The famous horse Childers was an amazing instance of rapidity; he has ran eighty two feet and a half in a second, or almost a mile in a minute: the same horse has run round the course at New-Market, which is only four hundred yards less than four miles, in six minutes and forty seconds. It is, however, remarkable, no other horse has since been able to equal him; and those of his breed has been remarkably deficient. This kind of horses derive their origin from Arabia, the seat of the purest and most generous breed. The hunter is a happy combination of the former with others of superior strength, but inferior in swiftness and lineage: this is a necessary union; for the fatigues of the chace require the spirit of the one, as well as the vigour of the other to support it. No other country can produce a breed of horses, equal in strength and size to ours, which are destined for the draught, or to the united strength and activity of those that form our cavalry. In London, we have had instances of a single horse that has been able to draw, for a small space, the weight of three tons; but could easily draw half that weight for a continuance. It has been usual for the pack-horses of Yorkshire to carry a burden of four hundred and twenty pounds, and that over the highest hills of the north, as well as the most level roads. Some of our mill-horses will carry at one load thirteen measures, which, at a moderate computation of seventy pounds each, will amount to nine hundred and ten. When it is considered that these horses are accustomed to the weight, by degrees, it will appear the less surprizing; it must also be remembered, that they travel only to and from the adjacent hamlets. The increase of our inhabitants, and the extent of our manufactures, together with the neglect of internal navigation, occasioned the number of our horses to be multiplied; an excess of wealth in-

creased the luxury of carriages, and added to the necessity of an extraordinary culture of these animals: the reputation they have acquired abroad, has also made them a branch of commerce, and proved an additional cause of great increase. When foreigners, particularly the French, describe our breed, they mention as a defect, the awkward motion of our horses; they admit them to be good; but will not allow them an easy or elegant carriage. But they do not consider, that this seeming want of grace is entirely the result of our manner of breaking them. Speed is what we consult in this animal's motions; whereas the French, and other nations, pay more attention to parade and spirit. We always throw our horses forward, while they put them upon their haunches; we teach them an easy, swift method of going, that covers a great deal of ground: on the contrary, they throw them back, which certainly gives them a more showy appearance, but makes them infinitely less useful. From our manner of breaking, it must be acknowledged, that the horse is sometimes apt to fall forward; whereas the French-managed horse generally falls on one side, never before. It would certainly be no difficult task to give our horses all that grace which foreigners are so fond of; but it would render them less swift and durable. But foreigners, in general, have now perceived their error, and our English hunters are considered as the most useful animals in the world. Numbers of geldings are sent over to the continent, and sell at very high prices. We have, indeed, a law prohibiting the exportation of our mares and stallions; and even so early as the times of Athelstan, their exportation was prohibited, except they were intended as presents.

Travellers report, that there are very good horses in the islands of the Archipelago. Those of Crete were much esteemed among the ancients, for their strength and swiftness; at present, however, they are little used even there, the country being uneven, rocky, and mountainous. The natives of the kingdom of Morocco are much smaller than the Arabian breed, but very fleet and vigorous. Horses of almost every race may be found in Turkey; Arabians, Tartars, Hungarians, and those natural to the place. The latter are extremely beautiful and elegant; they have a great deal of fire and swiftness, and yet are very obedient; but they cannot support fatigue. The Persian horses are, in general, the most beautiful and most valuable of any in the East. Great numbers of them are annually transported into Turkey, but more frequently into the East Indies: all travellers agree, that they are not to be compared with the Arabian horses, either for courage, strength or beauty. A writer on this subject says, that the breed of Egypt and Tingitania are preferable to all those of the neighbouring countries; though a century ago there were good horses all over Barbary. It is said that the excellency of these Barbary horses consisted in their never being tired, and in their standing still whilst the rider dismounts, or lets fall his bridle: they walk fast, and gallop swiftly; but are never suffered to trot or amble, the inhabitants of the country looking upon these paces as rude and ignoble. According to Leon, the African, the Arabian horses are descended from the wild horses of the deserts, of which, in antient times, large studs were formed, which have multiplied so much, that all Asia and Africa are full of them; they are so nimble, that some will outstrip the very ostriches in their course. The Arabians of the desert, and the people of Libia breed a great number of these horses for hunting. They send them to pasture while there is grass for them, and when that fails, they feed them only with dates and camel's milk, which makes them nervous, lean, and nimble. They lay snares for the wild horses, and eat the flesh of young ones, which they affirm is very delicate food. These wild horses are smaller than the tame ones, and are commonly ash-coloured, though there are also some white ones, the hair of whose manes and tails are commonly short and frizzled.



The horses of India are of a very indifferent kind. Those used by the grandees of the country, are brought from Arabia and Persia: they are fed sparingly with hay in the day-time, and at night with boiled peas, mixed with sugar and butter; this nourishment strengthens and supports them; otherwise they would soon degenerate, the heat of the climate being against them. The native horses of the country are very small. Tavernier says, some of them are so little, that a young prince of the Great Mogul, when but seven years old, rode one that scarce exceeded a greyhound in size; and one of these has been brought over into this country, as a present to our queen, that did not exceed nine hands high, and very little larger than a common mastiff. Those of the Gold Coast, as well as those of Judea, Guinea, &c. are, like those of the Indies, very bad: they carry their heads low; their walk is so tottering, that one would imagine they were always ready to fall; they would never stir, if not beat continually; and the greatest part of them are so low, that the feet of the rider almost touch the ground; in short, they are most untractable creatures, and fit only for food for the Negroes, Arabians, Tartars, and Chinese.

The horses of China are not superior to those of India: they are small, weak, ill-shaped, and spiritless: those of the Corea are not above three feet high, and so timorous that they cannot be rendered serviceable in war; it may, therefore, with propriety be said, that the Tartarian horses conquered China. These are, indeed, extremely serviceable in war; and although they are but of a middle size, they are surprizingly patient, vigorous, bold, and swift. The Tartars live with their horses nearly in the same manner as the Arabians do. When they are about seven or eight months old, the young children mount them, and make them walk and gallop, by turns, a little way: thus they break them by degrees, and oblige them to undergo long fastings, but they are never mounted for racing or hunting, till they are six or seven years old, and then they make them support incredible fatigue, such as travelling two or three days together without stopping, passing four or five, without any other food than a handful of grafs every eight hours, and to remain twenty-four hours without drinking. These horses which appear, and are, in reality, so robust in their own country, become enfeebled, and are soon good for nothing when transported to China or the Indies; but they succeed better in Persia and Turkey. The lesser Tartars have also a breed of small horses which they set such great store by, that they are not allowed to sell them to foreigners. There are also in Circassia, and in Mingrelia, many horses which are even handsomer than those of Tartary; and some much esteemed in the Ukraine, Wallachia, and Poland, but we have no account of their qualities and defects. Upon the whole, it is certain, that every country that boasts of a fine race of horses, is indebted to Arabia, their primæval seat.

Different nations are not agreed, as to the particular shapes that constitute the beauties of a horse. It may not therefore be amiss, to explain the terms, whereby dealers in horses among ourselves, denominate the particular parts of this noble animal; we shall likewise add some remarks, which may enable our readers to form a judgment of the perfections or imperfections of a horse, and direct him how to chuse a good one. The denominations of the external parts of a horse are these. The hair is, in general, called his coat; but it has different names in several parts of the body: the hairs on the under lip are the beard; and those which grow along the upper part of the neck are called the mane. That part of the neck which is most arched has the name of the crest, and when it sinks, a horse is said to be crest fallen. The tuft of hair which grows on the lower part of the hind-leg above the heel, is termed the feet-lock, or fetlock. The hair that grows round over the top of the hoof is the crown, or coronet, and the hair on the eye-lids, the eye-lashes. The body is called the carcass. The two

hollows above the eyes, most remarkable in old horses, the eye-pits. The mark, if any, that runs down the face, if pointed, is termed blaze, if broad, bald; and where there is a white spot in the forehead, it is the star. The back part of the head that joins to the neck, is the poll. The lips, with the tip of the nose, forms the muzzle. The fleshy rows that run across the roof of the mouth, are called the bars, and these are very remarkable in young horses.

The top of the shoulder blades, and highest part of the spine, at the setting on of the neck, are the withers; and from the top of this a horse is measured to know its size. From the withers, to the end of the false ribs, are the reins; and next these are the loins. The extremity of the reins above the hip to the tail, is called the croup; the part where the crupper lies, is the channel; the tail is the dock; and the sinking of the back, if any, has the name of the sway, or hollow, or low-backed. The hinder part of the belly, next the genitals, is called the flank, and this reaches from the small ribs to the haunches. The loose skin that covers the yard, is the sheath, and the belly reaches from this to the brisket. The point from the withers to the top joint of the thigh, enclosing the whole breast on both sides, is called the shoulder, at which the fore-legs begin; and the hind part pointing towards the brisket is the elbow. In the middle part is the knee, to which the fore-leg reaches. The extent from the knee to the pastern, is called the shank; and the strong tendon behind the shank inserted in the heel, is the back sinew. The place where the shank joins the pastern, is distinguished by the pastern or fetlock joint; and the pastern reaches from the lower part of the joint to the foot, and has a joint in the middle to facilitate the motion of the foot, which it distinguishes into two parts, namely, the great pastern next the shank, and the less next the foot. The joining of this last with the foot, is called the coffin-joint. The hoof is generally denominated the horn, or coffin, because it incloses the whole foot. The tender part of the hoof next the heel, is the frush, and the ball of the foot, the frog; though they should be considered as one. This reaches from the middle part of the foot to the heel; and the sole is the horny part which covers the rest of the bottom of the foot, and adheres to the verge of the hoof, where the nails are driven in, when a horse is shod. The sides meeting on the heel, are called the quarters. The haunches begin at the two bones of the back part of a horse, which enclose the loins, and descend to the ham, or hock. The stifle is seated in the middle joint of the thigh; and is outwardly that part which jets out from the thigh towards the belly. The thigh, or gascoin, begins at the stifle, and reaches to the bending of the ham or hock: the hock is the bending of the hind leg; and the round knob behind is the heel of the hock, in which the great master leader, or *tendo Achillis*, is inserted. The pasterns and feet are distinguished in the same manner as in the fore-legs; and that side of a horse which we usually approach, is called the near side, and the other the off side. Hence come the terms of near-foot, and off-foot, near-eye, and off-eye, and so of the rest. These are the common terms made use of by dealers in horses; but the true shape and form of each can only be distinguished by long experience: however, there are some obvious properties, in which the generality of dealers are agreed; marks which direct to their choice; and first, the marks of the teeth lead to the knowledge of the age.

One of the most important things to be known, is the age of the horse, and the most certain knowledge of this is obtained from the teeth. The first of these that appear are four, two above and two below, which are called foal-teeth, and may easily be distinguished from others by their whiteness: the rest come out afterwards till they are twelve in number, six above and six below. When a colt is between two years and a half and three years old, he casts four of these teeth, two above and two below. These are called nippers



or gatherers; and are much longer and larger than the fore teeth; with these he nips off the grass, and pulls the hay from the rack. When these are complete, the horse will be three years old, or somewhat more. When about four, he casts again two above and two below, one on each side the nippers; so that now there are no fore teeth remaining but the corner teeth; and hence it may be concluded, that he is about four years old. The tusks appear next after these, and are a little crooked. Those below come out before those on the upper jaw, and at four years old they are very small. When all the colt-teeth are cast, and the corner teeth begin to show themselves, then the horse comes five. From this age to five and a half the corner teeth remain hollow within, and are not quite filled up till the horse is six. At five and a half they are about a quarter of an inch high, and when he is full six, near half an inch. At six years old we are to examine principally the corner teeth and the tusks. That part of the corner teeth that had flesh within, first turns to a brownish spot, like the eye of a garden bean. At seven this mark becomes faint, and the tooth more even. At eight it quite disappears, though it possibly may remain in a very small degree for two or three more years; which has deceived many. The longer the corner teeth are, the older is the horse, and they are apt to grow more foul, and turn yellow. When this mark is gone, if you touch the tusks on the upper jaw with your finger, and find them worn away, and equal with the palate, you may certainly judge the horse is ten years old at least: the teeth from continual rubbing each other, grow smooth in all animals through age. Lastly, when the flanks of a horse are much sunk, the feet broken or spoiled, the pace bad, and the eye-pits hollow, you may certainly conclude the horse is considerably advanced in years.

We may judge of the natural and actual state of this animal by the motion of his ears; when he walks, he should project forwards the points of his ears; a jaded horse carries them low: those which are spirited and vicious, carry alternately one of their ears forwards and one backwards; all direct them to that side from whence they hear any noise; and if any one should strike them on the back or the rump, they turn their ears back. Horses who have their eyes deep sunk in the head, or one smaller than the other, have usually a bad sight: those whose mouths are dry are not of so healthy a temperament as those which have the mouth moist, and make the bridle covered with foam. A saddle horse ought to have the shoulders flat, moveable, and not very fleshy; the draft horse, on the contrary, should have them flat, round, and brawny: if, however, the shoulders of a saddle horse are too thin, and the bones show themselves through the skin, it is a defect which shews the shoulders are not free, and consequently the horse cannot bear fatigue. Another fault of a saddle horse is, to have the chest projected too forward, and the fore legs drawn too much back, because he is apt to rest on the hand in galloping, and even to stumble and fall: the length of the legs should be proportionable to the height of the horse; when the fore legs are too long, he is not sure-footed; if they are too short, he is too heavy in the hand. It is remarked, that mares are more liable than horses to be short legged; and that horses, in general, have the legs thicker than mares or geldings.

Were it possible to have an assemblage of perfections in one horse, the head should be lean and small, without being too long; the ears at a moderate distance, small, straight, narrow, thin, and well placed on the top of the head; the forehead narrow, and a little convex; the hollows filled up; the eye-lids thin; the eyes clear, lively, full of fire, rather large, and projecting in the head; the pupil large; the nether jaw thin; the mouth of a moderate width; the withers raised and sloping; the shoulders flat, and rather confined; the back equal, even, and insensibly arched lengthways, and raised on each side the spine, which should appear indented; the flank full and short; the

rump round and fleshy; the haunches well covered with hair; the stump of the tail thick and firm; the fore legs and thighs thin but fleshy; the knee round before; the houghs large and rounded; the sinews loose; the joint next the foot small; the fetlock not thickly covered with hair; the pastern not large, and of a middling length; the coronet raised; the hoof black, smooth, shining, and high; the quarters round; the heels wide and moderately raised; the frog small and thin; and the sole thick and hollow. The eyes are subject to many complaints, sometimes difficult to be known. In a healthy eye we ought to see through the cornea two or three spots of the colour of foot above the pupil; for to see these spots, the cornea must be clear, clean, and transparent; if it appears double, the eye is not good: a small, long, and strait pupil, encompassed with a white circle, is also a bad sign; and when of a bluish green colour, the eye is certainly bad, and the sight dull. On this useful part of our subject, we think it necessary to be a little more particular. When a horse is without blemish, the legs and thighs clean, the knees strait, the skin and flank thin, and the back sinews strong and well braced, he increases in value. The sinews and the bones should be so distinct, as to make the legs appear thin and lathy, not full and round; nor must there be any swelling near the coronet. The hocks should look lean and dry, not puffed up, as with wind.

With regard to the hoof, the coronet should be equally thick, and the horn shining and greyish. A white horn is a sign of a bad foot, for it will wear out in a short time; and likewise when the horn is thin, it is liable to be spoiled in shoeing, and by travelling hard on stony grounds. This is best known when the shoe is taken off, for then the verge all round the sole will appear thin, and the horse will wince at the least touch of the pincers. A strong foot has the fibres of the hoof very distinct, running in a direct line from the coronet to the toe, like the grain of wood. In this case, care must be taken to keep the foot moist and pliable. The greatest inconvenience attending a strong hard foot, is its being subject to rifts and fissures, which sometimes cleave the hoof quite through, from the coronet down to the bottom. A narrow heel is likewise a defect; and when it is not above two fingers in breadth the foot is bad: a high heel causes a horse to trip; and one too low, with long yielding pasterns, is very apt to be worn quite away on a journey. Too large a foot in proportion to the rest of the body, renders a horse weak and heavy.

The fore-head of a horse should be neither too broad nor too flat. The nose should rise a little, and the nostrils be wide that he may breathe more freely. The muzzle should be small, and the mouth neither too deep nor too shallow. The jaws should be thin, and not approach too near together at the throat, nor too high upwards towards the onset, that the horse may have sufficient room to carry his head in an easy graceful posture; and the tongue should be rather small, that it may not be too much pressed by the bit. The neck should be arched towards the middle; the hair of the mane long, small, and fine; and if a little frizzled, so much the better. A horse of a middle size should have the distance of five or six inches between his fore thighs, and less distance between his feet, near his shoulders when he stands upright.

The carcass should be of a middle size, and home-ribbed; but the short ribs should not approach too near the haunches, and then he will have room to fetch his breath. When a horse's back is short in proportion to his bulk, and yet otherwise well limbed, he will hold out a journey though he travels slow. When he is tall, at the same time, with very long legs, he is of little value.

The wind should never be overlooked in the choice of a horse; and it may be easily known by his flanks, if he is broken winded; when he stands quiet in the stable, because he always pinches them in with a very slow motion, and drops them suddenly. A thick winded horse



horse fetches his breath often; sometimes rattles or wheezes. This may be always discovered when he is put to brisk-exercises. The temper of this noble animal should also be observed. A vicious horse generally lays his ears close to his pole, shews the whites of his eyes, and looks dogged. An angry one may be known by his scowling looks, and he seems frequently to stand in a posture of defence: when very vicious, he pays no regard to the groom that feeds him; however, some horses that are ticklish will lay back their ears, and yet be of a good disposition. A fearful horse is apt to start, and never leaves it off till he is old and useless. With regard to colour, the bright bay, and, indeed, all kinds of bays, are accounted a good colour. The chestnut is generally preferable to the sorrel, unless the former happens to be bald, or party-coloured, with white legs. Brown horses have frequently black manes and tails, and their joints are of a rusty black. Those of this colour that are dappled are much handsomer than the rest. Horses of a shining black, and well marked, without too much white, are in high esteem for their beauty. A star, or blaze, or white muzzle, or one or more feet tipped with white, are thought by some to be rather better than those that are quite black. Of the greys, the dappled are accounted best; though the silver greys make a more beautiful appearance, and often prove good. The iron grey, with white manes and tails, are thought not to be so hardy; and, what is remarkable, are very apt to turn blind. Greys of every kind will turn white sooner or later; but the nutmeg grey, when the dappled parts incline to bay, or chestnut, are reckoned good hardy horses. Roan horses have a diversity of colours mixed together, but the white is more predominant than the rest. Most of them are hardy, and fit for the road; and some are exceeding good. Those of a strawberry colour nearest resemble the sorrel, and they are often marked with white on the face and legs: when the bay is blended with it, he seems to be tinged with claret; and some of these prove to be very good. Dun horses are seldom chosen by gentlemen: the fallow and cream-coloured are better esteemed, both for beauty and use. Those that are finely spotted with gay colours, like leopards, are great rarities.

Walking is the slowest of all paces belonging to a horse. In this he should step quick, and neither take too long, or too short steps: his carriage should be with ease, and this depends much on the liberty of his shoulders, and is known by the manner in which he carries his head in walking; in which he should raise his shoulders, and lower his haunches: he should also support his leg, and raise it high enough; but if he keeps it up too long, or lets it fall too slowly, he loses all the advantage of his suppleness, becomes heavy, and fit only to match with another, or for shew. It is not sufficient that his walk be easy, his steps must be also equal and uniform both behind and before. When the horse extends his hind leg too much, and rests it almost in the same place in which he rested his fore foot, the rider is much jolted. Horses with short bodies are subject to this fault. Such as cross their legs, or strike them against each other, are not sure footed; but on those whose bodies are longer, the rider sits most at his ease, because he is at a greater distance from the two centres of motion, the shoulders and haunches. In the walk there are four times in the movement; if the right fore-leg moves first, the left hind-leg follows the moment after; then the left fore-leg moves forward in turn, to be followed the instant after by the right hind-leg: thus the right fore-foot rests on the ground first, the left hind-foot next, then the left fore-foot rests; and, lastly, the right hind-foot, which makes a movement of four times, at three intervals of which the first and last are shorter than the middle one.

In the trot there are but two times in the movement: if the right fore-leg goes off first, the left hind-leg moves at the same time, and without any interval between the motion of the one, and the motion of the

other; also, the left fore-leg moves at the same time with the right hind-one, in such a manner, that there are in this movement of trotting only two times, and one interval: the right fore-foot and the left hind-foot rest on the ground at the same time; and then the left fore-foot and the right hind-one rest at the same time also.

In the gallop, which is a kind of leaping, there are three times and two intervals; and in the first of these intervals, when the movement is made with haste, there is an instant when the four legs are in the air at the same time, and when the four shoes of the horse may be seen at once. When the horse has the haunches and the houghs supple, and moves them with agility, the gallop is more perfect, and the cadence is made in four times: he then rests the left hind-foot, which shews the first time; then the right hind-foot falls to the ground, and shews the second time; the left fore-foot falls a moment after, shewing the third time; and at length the right fore-foot, which rests last, shews the fourth time. Horses usually gallop on the right foot, in the same manner as they carry the fore right leg in walking and trotting: they also throw up the dirt in galloping with the right fore-leg. In walking, the legs of the horse are lifted up only a small height; in trotting, they are raised higher; and in galloping, the feet seem to rebound from the earth. The walk, to be good, should be quick, light, and sure; the trot firm, quick, and equally sustained; the hind-foot ought to follow well the fore-foot: the horse, in this pace, should carry his head high, and his back strait; for if he rocks himself, he trots ill through weakness; if he throws out wildly his fore-legs, it is another fault; the fore-legs should tread in a line with the hind-ones, and always efface their tracks. When one of the hind-legs is thrown forwards, if the fore-leg of the same side remains in its place too long, the motion becomes more uneasy and difficult from this resistance; and it is for this reason that the interval between the two times of the trot should be short; but be it ever so short, this resistance is sufficient to make this pace more uneasy than walking and galloping. Horses who lift up their fore-legs very high, are not those which gallop the best; they make the least dispatch, and are the most fatigued; and this usually happens from their not having their shoulders sufficiently free.

Walking, trotting, and galloping, are the most usual natural paces; but some horses have another natural pace, called the amble, very different from the other three, and extremely fatiguing to the animal, notwithstanding, in this pace, the quickness of motion is not so great as in galloping, or trotting hard. In this pace, the foot of the horse grazes the ground still more than in walking, and each step is much longer. But the most remarkable circumstance is, that the two legs on the same side, for example, the fore and hind-leg on the right side, set off at the same time to make a step; and afterwards the two left legs move also, at the same time, to make another; so that each side of the body is without support alternately, and no equilibrium is maintained between the one or the other: there is, therefore, in the amble, as well as in the trot, but two times in the movement; and all the difference is, that in the trot the two legs which go together are opposite, in a diagonal line; instead of which, in the amble, the two legs on the same side go together: this pace is extremely fatiguing to the horse, and which he should never be suffered to use; but, on even ground, it is very easy to the rider. We are told that horses which naturally amble never trot, and that they are much weaker than others. It is certain colts often get this pace, more especially when they are forced to go fast, and have not as yet sufficient strength to trot or gallop. We may therefore look upon this pace as a defective one, and natural only to a number of horses weaker than others. Even those that are strongest among these, are worn out in less time than such as only trot and gallop: but, there are still two other paces, one between the amble and gallop, and the broken amble,



which weak or abused horses take of themselves, both which are more defective than the amble. The pace between the amble and the trot is somewhat of the trot and gallop, and both proceed from long fatigue, or great weakness of the loins. Pack-horses who have been overloaded, begin to make use of this pace, in proportion as they are ill used; and post-horses, when broken down and spoilt; and forced upon an attempt to gallop, make use of this pace instead of the latter.

Such are the beauties and imperfections, the improved qualities and defects of those useful animals, which, though endued with vast strength, and great powers, seldom exert either to the prejudice of their masters; on the contrary, they will endure the greatest fatigues for our benefit. Horses have a benevolent disposition, and a fear of the human race, together with a certain consciousness of the services we can render them. The hoofed quadrupeds are, in general, domestic, necessity compelling them to seek our protection: wild animals are furnished with feet and claws, adapted to the forming retreats from the inclemency of the weather; but the former are obliged to run to us for artificial shelter, as nature, in scarcely any climate, can supply them with necessary food throughout the year. Providence hath admirably adapted the several services of domestic animals towards the human race, and hath even ordered that the parts of such which have been most useful during their lives, should contribute to our wants after death. The principal uses the skin of the horse are applied to are, for collars, traces, and other parts of the harness: thus, even after death, he preserves some analogy to his state of servitude when alive. The mane is also used in making perukes, and the hair of the tail for bottoms of chairs, floor-cloths, cords, and lines for anglers.

In antient history we find the Egyptians made animals symbols representing divinity, and honoured them with public worship, authorized by the laws of the country. Whoever killed one of those consecrated animals was punished with death. In other heathen countries, every deity had his favourite animal dedicated to him: thus, the eagle was dedicated to Jupiter, the lamb to Juno, the bull to Neptune, and the horse to Mars, as the god of battle. The Persians sacrificed horses to the sun. The Suevi, an antient people of Germany, says Tacitus, supported white horses in the sacred woods, at the public charge, from which they drew omens: no one was permitted even to touch them; the prince and priest alone fastened them to a consecrated chariot, accompanied them, and observed their neighings and tremblings. We cannot, perhaps, better sum up our account of the horse, than by reminding our readers of that sublime description of this noble and generous animal, contained in the sacred writings. Here God is represented as speaking after the manner of men, and says to Job, "Hast thou given the horse strength? Hast thou clothed his neck with thunder, or given him courage? Canst thou make him afraid as a grass-hopper? The glory of his nostrils is full of terrors. His feet dig; he beateth with his hoof; he paweth in the valley, and rejoiceth in his strength. He goeth on to meet the armed men. He mocketh at fear, and is not affrighted; neither turneth he back from the sword. The quiver rattleth against him, the glittering spear, and the shield. He swalloweth the ground with fierceness and rage, so that it seemeth nothing under him: neither believeth he, that it is the sound of the trumpet. He saith among the trumpets, ha, ha; and he smelleth the battle afar off, the thunder of the captains, and the shouting."

NATURAL HISTORY of the ZEBRA.

**T**HIS animal has been mistaken by many authors for the wild Ass. Our translators of the bible, in the book of Job, have given the name of the wild ass to a beast which has little resemblance, in the description of the inspired pen-man, to that animal.

"Who hath sent out the wild Ass free? or who hath loosed his bands? whose house I have made the wilderness, and the barren land his dwellings. He scorneth the multitude of the city, neither regardeth he the crying of the driver. The range of the mountains is his pasture, and he searcheth after every green thing." This description will be seen to agree best with the Zebra, the most beautiful, and, at the same time, the wildest animal in nature. It is a native of many parts of the East, particularly of the southern country of Africa; and whole herds of them are frequently seen feeding on those extensive plains that lie towards the Cape of Good Hope. But they are so vigilant, that they will suffer nothing to approach them, and so swift, that they easily leave every pursuer behind.

The male Zebra rather resembles the mule than the horse, or ass, being less than the former, and yet larger than the latter, but of a much more elegant figure. Its head is small and short; the ears longer than those of the horse, but shorter than those of the ass. The eyes are full and bright; and the mouth is considerably large. The neck is long and slender, yet elegantly turned; the back is straight; the body rounded and small; the mane is short, not hanging down like that of the horse, but erect. The legs are finely placed, long, slender, but very strong; they seem all bone, only just covered with the skin. The tail is long, and tufted at the end.

The whole of this beautiful animal is parti-coloured, being striped in a transverse direction with streaks, which in the male are white and brown, or black; and in the female white and black. These colours are so exactly disposed in alternate stripes over the whole body, that one would imagine a rule and compass had been employed in painting them. The stripes, resembling so many ribbons laid over its body, are parallel, and curiously separated from each other; every stripe is perfectly distinct. The head, the body, the thighs, the legs, the tail, and even the ears, are thus beautifully streaked. The stripes of the body have their origin from the ridge of the back, and are carried down to the belly. The head is streaked with fine stripes of black and white, which in a manner center in the forehead. The ears are also variegated with a white and dusky brown; and the neck has broad stripes of the same dark brown running round it, which takes in the mane, leaving narrower spaces of white between them. The belly is white, except a black line, formed like a comb, reaching from between the fore-legs along the middle of the belly, two thirds of its length. There is a line of separation between the trunk of the body and the hinder quarters on each side, behind which, on the rump, is a plat of narrow stripes joined together by a stripe down the middle of the rump to the end of the tail, forming the figure of a fish bone. The feet are brown a little way above the hoofs; the tuft of the tail is of the same colour, as is also the muzzle; and on the outsides of each thigh are drawn obliquely three bars of brown, ending roundish at both ends. The legs are all encompassed with rings of white and brown, alternately, in an irregular and broken manner. All the marks are of a dark, blackish brown, and all the spaces between them are white.

A female Zebra was in the possession of the late Prince of Wales. This animal was brought alive, together with the male, from the Cape of Good Hope, and her general colour, exclusive of the stripes, which were all black, was of a bright bay on the head, neck, upper part of the body and thighs; but the belly, legs, and the end of the tail, were white. On the joints of the legs, it had such corns as we see in horses, and the hoofs were blackish. The head was striped a little different from that of the male, and the mane was black and white. The ears were of a bay colour, and there was a little white on the forehead, with several broad stripes round the neck, which became narrow on its under side. It had a black list running along the ridge of the back, and part of the tail, and another



another along the middle of the belly: the stripes on the body proceeded from the ribs on the back, and some of them ended in forks on the sides of the belly; others in single points, and these had some longish spots between them. The upper part of the body was spotted in a more irregular, confused manner; but the two sides were marked very uniformly. The noise it made was very different from that of an ass, resembling more the confused barking of a mastiff dog. It seemed to be of a savage and fierce nature; for no one could venture to approach it, but a gardener in the Prince's service, who was used to feed it, and could mount on its back. It would eat flesh, or any kind of food offered to it; and although it feeds naturally on vegetables, as horses and asses do, yet this animal, like them, was taught to live upon different food: and it is remarkable, that horses may easily be taught to drink milk, eat eggs, and such like substances.

The Zebra is the native of countries, where the human inhabitants are but little superior to the quadrupeds. Those of Angola and Caffraria consider horses only as being good for food: neither the stateliness of the Arabian dourser, nor the beautiful colours of the Zebra, have any allurements to a people, who only consider the quantity of flesh, and not the fine disposition of the parts. It is therefore imagined, that the Zebra may have continued wild, because a native of a country, where no successive efforts have been made to reclaim it. However, hitherto, the Zebra appears to have disdained servitude, and neither force nor servitude have been able to wean it from its native ferocity and independence. Yet, it is probable, that in time this wildness might be surmounted: perhaps, the horse and the ass were equally obstinate and unmanageable, when they were first taken from the forest. The Count de Buffon says, that the Zebra, from which he took his description, could never be mastered, notwithstanding the utmost pains were taken to tame it. Whenever it was mounted, two persons were obliged to hold the reins, while a third ventured upon its back; and, upon perceiving any one to approach, it always attempted to kick. That at our present Queen's Menagerie, near Buckingham Gate, was also extremely vicious, and the keeper found it absolutely necessary to inform the spectators of its ungovernable temper. It appeared as wild as if just caught, and would endeavour to kick any one who came near it, though it was taken very young, and treated with the utmost indulgence. But as the Zebra resembles the horse in form, it has doubtless a similitude of nature, and by art and industry might be numbered among our useful domestics; and, as a civilized people are now placed at the Cape of Good Hope, where this animal is principally found, it is likely that we may have them tamed, and rendered serviceable. We do not know that any one Zebra has ever been brought into Europe, that was caught sufficiently young, so as to be untinged by its original state of wildness; and we are inclined to believe, that were it taken very young, and properly managed, it might be rendered as tame as any other trained animal. It is not merely on account of the extraordinary beauty of this animal, that we wish it among the number of our dependents; its swiftness is said to surpass all others; it stands better on its legs than the horse, and is consequently stronger in proportion. When we consider this, and numerous other creatures, intended, by their formation, for the service of man, we cannot but acknowledge the goodness of God, and with the devout psalmist say, How wonderful are his works! Wisdom hath he made them all!

**NATURAL HISTORY of the ASS.**  
**T**HE ASS resembles the horse in many respects; but it is only a faint, a mean copy of that noble quadruped; for it is smaller, and wants the symmetry, as well as the dignity of appearance so conspicuous in

the generous horse; yet, from the great resemblance there is between them, we might, at first sight, be induced to suppose, that the ass was only a horse degenerated in the breed; but they are certainly distinct; an inseparable line is drawn between them; for the mule they produce is barren, which appears to be a barrier between every species of animals. Providence has stopped the fruitfulness of these ill-formed productions, to preserve uncontaminated the form of every animal: without this regulation, the races would, in a short time, be mixed with each other; every creature would lose its original perfection, and degenerate. Although we cannot demonstrate, that the production of a species by degeneration is a thing impossible in nature; yet the number of probabilities to the contrary is so great, that we can no longer doubt of it; for if some species have been produced by the degeneration of others, if the species of the ass came from that of the horse, this can only have happened successively; and then, by degrees, there would have been between the horse and the ass, a great number of intermediate animals, the first of which would have differed but slightly, in its nature, from the horse, and the latter would have approached, by degrees, to that of the ass; and why do we not see the representatives, the descendants, of those intermediate species? Why do only the two extremes remain? The ass then is not a horse degenerated; he is neither a stranger, an intruder, nor a bastard; he has, like all other animals, his family, his species, and his rank: his blood is pure, and although his nobility is less illustrious, yet it is equally good; equally ancient, with that of the horse. Why then have we so much contempt for this humble, this useful creature? Do men carry their contempt even to animals; those too which serve them so well, and at so small an expence? We bestow education on the horse, take care of him, instruct him, and exercise him; but the ass is abandoned to the care of the lowest servant, or the tricks of children; and if there were not a fund of good qualities in him, he would certainly lose them, by the manner in which he is treated. He is the may-game or drudge of vagabonds, who beat him cruelly with sticks, overload him, and make him work beyond his strength. We do not consider, that the ass would be in himself, and with respect to us, the most beautiful, the best formed, and the most distinguished of animals, if there were no horse in the world: he is the second, instead of being the first, and it is from that circumstance only that he appears to be of no estimation: the comparison degrades him; we look at him, and give our opinions, not from himself, but comparatively; we forget that he is an ass; that he has all the qualities of his nature; all the gifts attached to his species; and, at the same time, we only think of the figure and qualities of the horse, which are wanting in him, and which he ought not to have.

They are easily distinguished from each other with the glance of an eye, for the head of the ass is larger in proportion to its body; the ears much longer, and narrow, without an elegant effect in their appearance; the fore-head and temples are furnished with longer hair; the eyes are large, but not so prominent, nor are they bright or striking in their appearance; the lower eye-lid is more flat; the upper lip more pointed and hanging; the neck is moderately long, but it is lank, and not finely turned; the body is rounded, and the back not much depressed; the legs are long and slender; the tail is very long, not hairy all the way, as in the horse, but only at the end. The ass is covered with a short and coarse fur, of a pale dun colour, and has a streak of black running lengthways down its back, and another across the shoulders; its neck does not wholly want a mane; but it is shorter and less regular than in the horse: besides, the withers are not so high as those of the horse; the back-bone generally stands more out, and the hindmost parts are higher than the withers. However, the fore-legs are like those of the horse; but in the hind legs there is some difference, for they are generally more crooked. The large



large head, the eyes sunk into it, and at a great distance from each other, these with the muzzle prominent towards the end, give an air of stupidity to this inoffensive animal that never appears in the horse; nor is the shape, when taken altogether, by any means so beautiful. His pace corresponds with his figure, and he is much more sluggish than the horse.

But though, in a comparative view, the ass appears to disadvantage, yet, with all his imperfections, he is not without some good qualities. He is naturally as humble, patient and quiet, as the horse is proud, ardent, and impetuous; he suffers with constancy, perhaps with courage, chastisement, and blows; he is moderate both as to the quantity and quality of his food; he is contented with the hardest and most disagreeable herbs, which the horse, and other animals, will leave with disdain; he is very delicate with respect to his water, for he will drink none but the clearest, and from rivulets he is acquainted with: he drinks as moderately as he eats; but does not put his nose in the water through fear, as some say, of the shadow of his ears. As care is not taken to curry-comb him, he frequently rolls himself on the grass, thistles, and in the dust; and without regarding his load, he lays himself down to roll about as often as he can, by this reproaching his master of the little care he takes of him; for he does not paddle about in the mud and in the water; he even fears to wet his feet, and will turn out of the road to avoid the mud: his legs are also drier and cleaner than those of the horse. In the early time of their youth asses are sprightly, and even handsome; they are light and genteel; but they soon lose these recommendations, either from age, or bad treatment, and become slow, indocile, and head-strong. The ass is ardent in nothing but pleasure, or rather he is so furious in that respect, that nothing can detain him; and, as he loves with a kind of madness, he has also the strongest attachment to his progeny. Pliny assures us, that when the mother is separated from her young one, she will go through fire to recover it. Nor is the ass less attached to his master, notwithstanding he is usually ill-treated by him: he will smell him afar off, and can distinguish him from other men: he also knows the places where he has lived, and the ways which he has frequented: his eyes are good, and smell acute. When he is overloaded, he shews it by lowering his head, and bending down his ears: when he is greatly abused, he opens his mouth, and draws back his lips in a disagreeable manner: if his eyes are covered over, he seems motionless, and when laid down on his side, and his head is fixed in such a manner, that one eye rests on the ground, and the other is covered with a piece of wood, he will remain in this situation without any motion, or endeavour to get up: he walks, trots, and gallops, like the horse, but all his motions are smaller, and much slower; notwithstanding, he can run with tolerable swiftness; however, he can gallop but a little way, and only for a small space of time, and whatever paces he uses, if he is hard pressed, he is soon fatigued. The ass, like the horse, is three or four years in growing, and will live till twenty-five or thirty. He sleeps much less, and never lies down for that purpose, unless very much jaded.

In general, this animal has much better health than a horse, and is subject to fewer diseases; and of all animals covered with hair, the ass is less troubled with vermin: he has no lice, which perhaps may proceed from the hardness and dryness of his skin, far beyond the generality of most quadrupeds; for the same reason he is less sensible of the strokes of the whip, and the stinging of flies. His teeth fall, and grow at the same age, and in the same manner as in the horse, and he has the same marks in his mouth.

Asses breed generally in the months of May and June: in the tenth month the milk appears in the female; but she does not bring forth till the twelfth month: seven days after she is ready for the male again, and always brings forth one at a time. The horse neighs; but the ass brays, which he does by a

long discordant cry, from a sharp key to a flat, and the contrary. He seldom makes his disagreeable cry, but when pressed by love or appetite. The noise of the she-ass is shrill, and clearer. The ass is perhaps, with respect to himself, an animal which can carry the greatest weight; and as it costs but little to feed him, and he requires little attendance, he is of great use in the country, at the mill, &c. He also serves to ride on, as all his paces are gentle, and he stumbles less than the horse. He is frequently put to the plough in countries where the earth is light, and his dung is an excellent manure to enrich some kinds of grounds.

As the skin of the ass is extremely hard and elastic, it is used for different purposes, such as to make drums, shoes, &c. and thick parchment for pocket-books, which is slightly varnished over. It is also with the ass's skin that the Orientals make the Sagri, which we call shagreen: it is also probable, that the bones of this animal, as well as the skin, are harder than the bones of other animals; since the ancients made flutes of them, and they were found to have shriller tones than those produced from other bones. Notwithstanding it is in so many respects useful, yet the ass is suffered to dwindle every generation, and were it not for the medicinal qualities of its milk, the whole species might have been long since extinguished. Indeed, this animal, now so common in all parts of England, was entirely lost among us during the reign of Queen Elizabeth. Hollingshed informs us, that in his time, "Our lande did yelde no asses." However, there are accounts of their being common in England before that time, for mention is made of them in the time of king Ethelred, when the price of a young ass was twelve shillings: they are also mentioned in the reign of Henry III. It must therefore have been owing to some accident that the race was extinct in the days of Elizabeth. It is probable, that it was again introduced in the succeeding reign, when our intercourse with Spain was renewed, in which country this animal was greatly used. There are among asses different races, as among horses, but they are much less known, because they have not been taken the same care of, or followed with the same attention; but we cannot doubt that they came all originally from warm climates. Aristotle assures us, that there were none in his time in Scythia, nor in its neighbourhood, nor even in Gaul, which he says is a cold climate; and he adds, that a cold climate either prevents them from procreating their species, or causes them to degenerate; and that this last circumstance is the reason why they are small and weak in Illyria, Thrace, and Epirus. They are still the same in France, where they have been, for many ages, naturalized, and where the coldness of the climate is much lessened since two thousand years; by the number of forests destroyed, and marshes dried up: but it is still more certain that they have been newly introduced into Sweden, and are rarities in the other northern countries. They appear to have come originally from Arabia, and to have passed from thence into Egypt; from Egypt into Greece; from Greece into Italy; from Italy into France; and afterwards into Germany and England; and, lastly, into Sweden, &c. This migration seems to be well proved by the account of travellers. Chardin says, that there are two kinds of asses in Persia, those of the country, which are slow and heavy, and used only to carry burdens, and a race of Arabian asses, exceeding beautiful: the skin is polished, the head high, the feet light, which they raise with grace, walk well, and are made to ride on. The saddles which they use with them are like a bat, round on one side, flat on the other: they are made of linen or tapestry, have harness and stirrups, and are placed nearer the rump than the neck. Some of these asses cost eighteen pounds sterling; none are sold under twenty-five pistoles, or sixteen pounds. They are broke like horses, but are taught no other pace than the amble: their nostrils are slit in order to give them more breath, and they go so fast that a horseman must gallop



gallop in order to overtake them. In Egypt they are handsome, and high in stature; they are the same in climates excessively hot, as in the Indies, and in Guinea, where they are larger, stronger, and better than the horses of the country; a great number of them are in the Madeiras, where one of the most considerable tribes of Indians pay homage to them; for they believe, that the souls of all their chiefs pass into the bodies of these animals: in short, asses are found in great numbers in all parts of the East, from Senegal to China, and wild asses are more commonly found than wild horses.

#### NATURAL HISTORY of the MULE.

**I**N creating animals, the Supreme Being has followed but one idea, and varied it, at the same time, in every possible method, that man may equally admire the magnificence, execution, and simplicity of the design. In this point of view, not only the horse and ass, but even man, and all animals, may be looked upon as making but one family; but we ought not to conclude, that in this great and numerous family, which God hath created from nothing, there are other small families projected by nature, and produced by time. If these families existed, in fact, they could only be formed by the mixture, the successive variation, and the degenerations of the original species; and if we admit for once, that there are families in plants and animals, that the ass is of the family of the horse, and that he only differs because he has degenerated, we may say, with as much propriety, that the monkey is of the same family with man, and that he is a man degenerated. But it is certain by revelation, that all creatures have equally participated of the grace of infinite wisdom, which has fixed immutable bounds to the laws of nature, and said unto her, Hitherto thou shalt go, and no farther. Whence we may conclude, that the two first of each species originally came immediately out of the hands of the Creator; and we ought to believe, that they were nearly such from the beginning as they appear at present in their descendents. Since nature has been observed, to the present time, we have not seen any new species, notwithstanding the rapid motion drags on, or dissipates the parts of matter; notwithstanding the infinite number of combination, which must have been in the space of twenty ages; notwithstanding the fortuitous couplings of animals allied nearly in their species, or others bearing no resemblance, and from which nothing has ever resulted but individuals, as the mule, vitiate and sterile, and such as have not been able to become a stock for new generations. We must also consider, that although nature makes its progress through clouds, and by degrees frequently imperceptible, the intervals of these degrees or clouds are not always the same; that the more exalted the species the fewer they are in number, and the greater the intervals of the shades are that separate them; that the smaller species, on the contrary, are very numerous, and, at the same time, have more affinity to each other, so that we are the more tempted to confound them together in one family, as they fatigue and embarrass us the more by their numbers and small differences, with which we are obliged to charge our memories: but we must not forget that these families are our own works, that we have made for the ease of our minds; that, if we cannot comprehend the order of succession, it is ourselves, not nature, that we ought to blame, who knows not these pretended families, and in fact contains only individuals. It is then in the characteristic diversity of the species, that the shades of nature are the most sensible, and best marked; we may even say, that these shades between the species are the most equal and least variable of all, since we may always draw a line of separation between two species; that is to say, between two successions of individuals, which would re-produce in mixing. This is the most fixed point that we have

in natural history, and all the other differences that we can make in the comparison of beings, would be neither so constant, so real, nor so certain. If there is any truth in these sentiments, on the degeneration of beings, are they not highly culpable who introduce into the perfect works of creation unnatural mixtures, or a species of beings, produced contrary to the established laws of nature, and the declared intention of the all-wise Creator? In the beginning, the Lord God said, Let the earth bring forth the living creature (that is, animals having a self-moving principle, or soul of life) after his kind; cattle, and creeping thing, and beast of the earth, after his kind; and it was so. In the second law which God gave in mount Sinai, to prevent confusion, he says to the Israelites, Thou shalt not sow thy vineyard with divers seeds, lest the fulness of the seed which thou hast sown, and the fruit of thy vineyard be defiled. Thou shalt not (even) plough with an ox and an ass together. The tenor of this law is to walk in simplicity, and that we ought not to be curious of new inventions, especially such as counteract, or may be contrary, to the settled laws of nature, appointed and established by an over-ruling Providence. Neither mules, nor the spurious offspring of any other animal, generate any farther: all these productions, therefore, may be considered as monsters; therefore nature wisely stops, in the first instance, the powers of propagation, in order to preserve the original species of animals pure and entire.

The mule is an animal engendered between a horse and a she ass, or between an ass and a mare; consequently is a creature of a middle nature, between its parents. Those produced by the two last are esteemed the best, being larger, stronger, and better shaped: as they partake more of the female than the male parent, they generally inherit, in a great degree, the obstinacy of the former; though their viciousness, it must be acknowledged, may be heightened by their being injudiciously broke. The common mule is very healthy, and will live above thirty years. They are extremely fit to carry great burdens, as they seldom stumble. In Spain coaches are all drawn by mules; and they are of great service in the mountainous parts, on account of their climbing and passing safely upon the very edge of a precipice. They are also employed in carrying the litters of sick persons, the baggage of an army, and the equipage of princes and officers: in short, they serve for all the purposes of horses, and are much more patient and laborious. Fifty or sixty guineas is no uncommon price for one of them.

#### NATURAL HISTORY of the ONAGER, or ANGRA.

**I**N the warmer climates the ass is wild; and authors, who are fond of multiplying species, suppose it different in this wild state from the tame ass, and call it Onager. But in their descriptions they give no specific mark of distinction. Some have confounded this animal with the zebra, of which we have given a separate account: but the angra, or wild ass, is neither striped like the zebra, nor is near so elegant in figure. Wild asses are found in some of the islands of the Archipelago, particularly in that of Cerigo: there are also many in the deserts of Lybia and Numidia: they are grey, and run so fast, that the horses of Barbary can only beat them in hunting. When they see a man, they give a loud cry, turn themselves about, stop, and do not attempt to fly till he comes near them: they are taken in snares, made with ropes, and go in troops both to pasturage and to drink. There were also wild asses in the island of Sardinia, but less than those of Africa; and a Spanish writer says, he saw a wild ass at Baffora, whose figure differed in no respect from a domestic one; he was only of a lighter colour, and had, from the head to the tail, a stripe of white: he was also much livelier and lighter in hunting than asses usually are. Neither horses nor asses are natives of America, although the climate, especially



especially in North America, is as good for them as any other.

They were imported originally into America by the Spaniards; and afterwards by other nations, where they have run wild, and multiplied in such numbers, that in several places they are become a nuisance. Ulloa informs us, that, in the kingdom of Quito, the owners of the grounds where they are bred, permit any persons to take away as many as they can, on paying a small consideration, in proportion to the number of days their sport continues. Their manner of catching them is remarkable. A number of persons go on horseback, attended by Indians on foot. At proper places they form a circle, in order to drive them into some valley, where, at full speed, they throw the noose, and endeavour to halter them: the animals, finding themselves enclosed, make furious efforts to escape, and if only one happens to make his way through, they all follow with an impetuosity irresistible: but when they are noosed, the hunters throw them down, secure them with fetters, and leave them till the chase is over. These animals will not suffer a horse to live among them; and should any one happen to stray into the place where they graze, they immediately fall upon him, and without permitting him to escape, they bite and kick him till they leave him dead. When they are attacked, they defend themselves with their heels and mouth with such activity, that, without slackening their pace, they often maim their pursuers: they have all the swiftness of horses, and neither declivities nor precipices can retard their career. It is, however, extremely remarkable, that, after carrying their first load, their celerity and ferocity leaves them, and they soon contract the stupidity and dulness peculiar to tame asses.

As wild asses are unknown in these climates, we cannot say whether the flesh is good to eat; but it is certain that the flesh of the domestic ass is extremely bad, and harder than that of the horse. Galen says, that it is a pernicious aliment, and occasions several diseases. But the Persians set so great a value on the flesh of these animals, that they have a proverb expressive of it. However this be, asses milk is a specific remedy, and by no means to be ranked in the class of useless medicines: it is well known to be of great use in many complaints, being clearer, lighter, and easier of digestion, than the milk of any other animal that we are acquainted with: it curdles less upon the stomach than any other; and, therefore, when the tone of the stomach is so weak as to digest nothing else that is

nourishing, asses milk will sit easy upon it: for this reason it is used in curing diseases of the lungs, and may be of service in all internal ulcers. Some affirm it helps the gout and the rheumatism, by abating the acrimony of the fluids. That it may be good in its kind, we should chuse a young healthy she-ass, full of flesh, that has lately foaled, and which has not since been with the male; the young one which she suckles must be taken from her, after which she is to be fed well with hay, wheat, and grass, whose qualities may have influence on the disease, with particular care not to let the milk cool, nor even expose it to the air, which will spoil it in a little time.

#### NATURAL HISTORY of the UNICORN.

WHETHER this animal ever existed or not, we are now scarce able to tell, since there is no living testimony of its existence, nor has been for several ages. There are, it is true, many horns kept in the cabinets of the curious, that have been said to be horns of a unicorn; but these, we know, do not belong to a quadruped, but to a fish distinguished by that name; it is possible, however, that such an animal might once have existed, but, like the European elk, has long since disappeared. In holy writ, the Divine Being is represented as thus speaking to Job; "Will the unicorn be willing to serve thee, or abide by thy crib? Canst thou bind him with his band in the furrow? Or will he harrow the valleys after thee? Wilt thou trust him because his strength is great? Or wilt thou leave thy labour to him? Wilt thou believe him that he will bring home thy seed, and gather it into thy barn?" But in this description of the unicorn there are no particular marks of distinction, nor any characteristics, except such as are equally applicable to every beast, remarkable for his vigour, spirit, and fortitude. This animal has been described by some authors as having the body of a horse, with one horn growing out of his forehead. The certainty of his existence as represented by them, has induced many travellers to search after him with greater care: but, after the most diligent enquiry, made in all parts of the world, there is no such creature now to be found. We know of no quadruped that has a single horn, but the rhinoceros; nor is that in the middle of the forehead, but on the nose: whether this has given rise to the fable of the unicorn, or not, we will not take upon us to determine.

## C H A P. II.

*The NATURAL HISTORY of RUMINATING ANIMALS, and those of the Beeve kind, namely, the BULL, Ox, Cow; the URUS, BISON, BONASUS, ZEBU; the BEEVE HOG; BUFFALO, and SIBERIAN COW.*

TO preserve a succession of beings, it is necessary they should destroy among themselves; and that animals may subsist and be nourished, they must destroy vegetables, or other animals; yet nature, like a prudent mother, in the midst of abundance, has fixed bounds to her liberality, and prevented an apparent waste, in giving but a few species of animals the instinct of feeding on flesh, and she has even reduced to a small number those species which are voracious. Such as feed on plants or vegetables, she has more abundantly multiplied: she seems to have been prodigal to the vegetable, and to have bestowed on each great profusion and fecundity, perhaps, to second her views in maintaining and even establishing this order on the earth. Animals that chew the cud are the most inoffensive, and the most easily tamed. Living en-

tirely upon vegetables, they have neither pleasure nor interest in making war upon other creatures. The fiercest of the carnivorous kind seek their food in gloomy solitude; but these range together in herds, and the very meanest of them unite in each others defence. The food of ruminant animals being easily procured, they seem naturally more indolent, and less artful, than those of the carnivorous kinds. The fox and the wolf are habituated to want, and long habit furnishes them with a degree of sharpness and cunning; their life is a continued series of stratagem and escape, but the bull and ox enjoy the repast which nature has abundantly provided them with, certain of subsistence, and satisfied with security.

Before grass can be transmuted into flesh, it requires a long and tedious process, therefore nature has generally



rally furnished such animals as feed upon grass with four stomachs. The first is called the paunch, which receives the food after it has been slightly chewed; the second, a continuation of the former, is called the honey-comb; these two, which are very capacious, the animal fills with as much expedition as it can, and then lies down to ruminate. When these two stomachs are filled, and the grass, that was slightly chewed, begins to swell with the heat of the situation, the stomachs dilate, and afterwards contract upon their contents. The aliment, thus squeezed, has two passages to escape at; one in the third stomach, which is very narrow; and the other back, by the gullet, into the mouth, which is wider. The greatest quantity is driven back through the largest aperture into the mouth, to be chewed a second time; and a small part, the most liquid, is driven into the third stomach, through the small aperture. The food which is chewed a second time, is by that means rendered more soft and moist; and at length passes into the conduit that leads to the third stomach, where it still suffers comminution. The third stomach is called the manifold; from the number of its leaves, which all tend to promote digestion. It requires the operation of the fourth stomach to make a part of the animal's nourishment, where it undergoes a complete maceration, and is separated to be turned into chyle. Thus all quadrupeds that ruminate are furnished with four stomachs for the macerating of their food. These only are properly called the ruminant kinds, though many others have this quality in a less observable degree. The rhinoceros, the camel, the horse, the rabbit, the squirrel, and the marmotte, all chew the cud occasionally, but they are not furnished with stomachs like the ox and cow. There are many other animals that appear to ruminate, as birds, fishes, and insects. Among birds that have a power of disgorging their food to feed their young, are the pelican, the stork, the heron, the pigeon, and the turtle; all which have the stomach composed of muscular fibres, in the same manner as those which are particularly distinguished in this chapter by the appellation of ruminants. Men themselves have been known to ruminate. An account of a ruminating family is given us in the Philosophical Transactions; but, as the particulars cannot possibly be agreeable to our readers, we shall purposely omit them. Instances of this kind, however, are accidental and uncommon; and it is fortunate for mankind that they are so. Of all other animals, we spend the least time in eating: this is a principal distinction between us and the brute creation; and eating is a pleasure of so inferior a kind, that only such as are allied to the quadruped, desire its prolongation.

All animals with horns, if of the ruminating kind especially, have suet, others have only fat, which is softer, and melts more readily before the fire. Cloven-footed animals have each toe covered with a kind of hoof, the upper part of which is of a horny substance; and the lower, which composes the sole of the foot, is callous. In the deer, goat, and sheep kind, it is softer, and these animals have two small hoofs or nails behind, which are useful to keep the feet from sliding.

The climate of England is above all others productive of the greatest variety and abundance of wholesome vegetables, almost equally diffused over all its parts. For this general fertility we are indebted to those clouded skies, which mistaken foreigners mention as a reproach to our country: but let us cheerfully endure a temporary gloom; whereby our hills and meadows are clothed with the richest verdure. To this we owe the number, variety, and excellence of our cattle, the luxurious plenty of our dairies, and innumerable other advantages. After man, animals that live on flesh only, are the greatest destroyers, enemies of nature, and our rivals; but the bull, ox, and cow, of which we are now about to treat, and other animals which subsist on grass, are the best, the most useful, and the most precious for man; since they not only nourish him, but consume and cost him

least they likewise give as much to the earth as they take from it; and enrich the ground whereon they live. We have no general name for these kind of animals, except the beever, which is now almost out of use, though very proper to be retained. It answers to the Latin word *bos*, which comprehends the bull, ox, and cow, and may be extended to all of this kind. Of all ruminating animals, these deserve the first rank, with respect to their size, their beauty, and their services: we therefore shall proceed to give a descriptive account of them, and point out their utility in due order.

#### NATURAL HISTORY of the BULL, OX, and COW.

**T**HE bull is a very heavy, yet a fierce, stately looking animal. The head is large, oblong, and very broad: the nose is obtuse: the nostrils are wide; the eyes large, and have a very fierce aspect; the ears are long and patulous; the horns short, hollow, turned forward, smooth on the surface, and sharp at the point; their figure is lunulated, or like the moon when crescent. The forehead is decorated with short curled hair; the skin hangs loose under his throat; the neck is very thick and robust; the body very large; the legs strong, and of a moderate length; the tail long, and the colour is generally a deep reddish brown, but it varies greatly. The fore-teeth are eight in number, but there are no canine teeth.

Among the ancients, the bull was the most usual victim in sacrifices, and was chiefly offered to Jupiter, Mars, Apollo, Minerva, Ceres, Venus, and the Lares. Black bulls were selected for Neptune, Pluto, and the infernal deities: before they were sacrificed, they were variously adorned. Over the middle of the body was placed a large piece of cloth, which hung down on both sides, and was ornamented with flowers; their horns were decorated with festoons. The bull that was sacrificed to Apollo, had usually great horns. The blood of a bull was looked upon by them as a poison; this opinion is found to be false, for some of the moderns have given a drachm of it, mixed with white wine vinegar, against all internal hæmorrhages, though with what success it is hard to say. Formerly, the flesh of this animal, after he had been baited, was much used in England, especially by the poor; but it is now seldom bought for food; and, if we are not mistaken, when butchers expose bull beef in their shops, they are obliged, by a penal law, to burn a candle during the time of sale. However, this is certain, bull beef contains a great deal of volatile salt and oil; it is also hard, tough, and dry; for which reasons it cannot be either pleasant or wholesome food. At present the bull is kept chiefly for the propagation of his species; and we must be on our guard against the use he makes of his strength; for nature has made this animal indocile and haughty; and, at certain times, he is very furious. The bull that is to be turned among cows, should always be the most beautiful that can be found, large, well made, and fleshy; of a middle age, between three and nine years old; he ought not to have above fifteen cows, though this rule is never observed near London. In all quadrupeds, the voice of the male is stronger and deeper than that of the female, and we believe there is no exception to this rule. The ancients say, that the cow, the ox, and even the calf, have the voice deeper than the bull; but, it is certain, this animal has a stronger voice, since he can be heard much farther. What has afforded grounds to think that his voice is less deep is, that his bellowing is not a simple sound, but one composed of two or three octaves, the highest of which strikes the ear most; and, if we give attention thereto, we hear a grave sound, and at the same time one much deeper than the voice of the cow, the ox, or the calf, whose lowings are much shorter. The bull bellows only when he is enamoured; the cow more frequently lows through fear and dread than love; and the calf bellows from pain, want of food, and a desire of being with its mother.



The Ox is cloven-footed, and well known to be a castrated bull. His general colour is fallow, though there are many others: some are entirely black, others white, red, bay, brown, and some still variegated with different colours. Like all other ruminating animals, he has no fore-teeth in the upper jaw; but in their stead a thick hard membrane formed of the inward skin of the mouth, which serves for the same purposes. The fore part of the lower jaw, is furnished with eight incisive, or cutting teeth, of different lengths, and so disposed, that those in the middle are longer and broader than the rest, which grow less gradually. There are no dog teeth between the incisors; inasmuch, that there is a large space without any teeth at all. In each jaw are twelve grinders, six on each side; and there are several pointed protuberances on the top, between which there are little cavities, so placed, that when the upper and lower meet, the points of those above fall into the cavities of those below, they allow the under jaw a motion sideways, which is not above half as broad as the upper; for which reason the teeth in the upper jaw are much broader, which consequently supplies their want of motion. The age of a beeve is known by the teeth and horns. The first fore-teeth fall out at the age of six months, and are replaced by others that are not so white but broader. At the end of sixteen months, the next milk teeth likewise fall out, and others grow in their room; at the end of three years, all the incising or cutting teeth are renewed, and then they are long, white, and equal. In proportion as the animal advances in years they become unequal and black, as well in the ox, as the bull and cow; for castration makes no change in the teeth. Their horns, however, have a difference, for they become longer in an ox after castration. At the age of three years they fall off, and new ones arise in their places, and these continue as long as they live. At four years of age the ox has small pointed, neat, smooth horns, that are much thicker near the head; the next year they rise to a greater distance, and are thrust forwards by a horny cylinder; thus are they protruded one after another annually; for as long as this animal lives, the horns continue to grow, and by these swellings the age can be certainly known; but then the point, or upper part of the horn to the first ring must be reckoned for three years, and one year for each of the rest.

An Ox is not so proper as the horse to carry burdens, though made use of for riding in some eastern countries: however, he is of great use in ploughing, and harrowing land, and very fit to bear the yoke. In some parts of Europe they do not yoke them together by the necks, but by the horns. His large size, slow motion, stout legs, and great patience, render him very proper for labour, and seem to have fitted him for turning the soil on which he feeds. The time of inuring him to labour is at the age of two years and a half, or three years at farthest; for when he is older, he becomes untractable, and sometimes will never be thoroughly broke in. When strong and fit for labour, his skin is usually sleek, and his hair soft and shining; when otherwise, it is a sign the animal is not in health, or that at least he is weakly. At ten years of age he is usually taken from labour, and fed for slaughter. He generally becomes fat in five months; for he is very quick in feeding, and fills himself very soon; after which he lies down and ruminates, or chews the cud. The two first stomachs are nothing but a continuation of the same bag, and are very capacious. After the grass has been chewed over again, it is reduced to a sort of paste; not unlike minced spinage; and it is under this form, that it is retained in the fold of the third stomach; but the digestion is not perfectly effected till it comes into the fourth, where it is reduced into a perfect mucilage or pulp. When the Ox has thus fed to satiety, he lies down, generally on the left side; for which reason the kidney on that side is always the largest, and sur-

rounded with more fat than the right. While awake, he continues to ruminate, but he sleeps little, and awakes at the least perceptible noise.

The flesh of this animal, or ox beef, contains a great deal of oil and earth, and is in great esteem. It is very nourishing, and yields a strong aliment; we seldom perceive any bad effects from it; on the contrary, those who live chiefly upon this diet are strong, vigorous, and healthy: it ought, however, to be young, fat, tender, and well fed, for, otherwise, it is hard of digestion, tough, breeds gross humours, and causes obstructions. But such as are weak, and lead sedentary lives, together with infants, and very old people, should use it with moderation. As to its medicinal qualities, and use, these are various. Beef-suet is emollient and resolvent. It may be used in clysters to an ounce, to abate sharp humours in the intestines. It is exceeding good to heal chapped lips. The common people frequently apply the tallow of a candle by way of lip-salve, and it is the best we have. Beef marrow is said to be good against weakness of the nerves, as well as for rickets and the scurvy; for which purpose it is made into a liniment mixed with wine. The gall of an ox or cow is preferred before that of any other animal, because it is more acrid, volatile, and penetrating. Some have given a drachm of it in laxative clysters, to render them more sharp when the body is bound. A plaister composed of this gall, aloes, myrrh, and oil of coloquintida, laid upon the navel, produces the same effect, as well as kills worms: it is very proper for those who cannot take medicines inwardly. For children, a little of this gall, mixed with aloes, and applied to the belly, has been often found beneficial on the same account. A bit of cotton steeped in this gall, and introduced into the ear, will cure hardness of hearing, if continued some time; water distilled from it is said to be good against spots in the eye, and dimness of sight from the opacity of the cornea: the best way to lay it on is with a pencil, and then it will work a cure in a short time. The tincture of ox-gall is an excellent cosmetic when rubbed all over the face; but it must not be wiped off, nor exposed in the open air, for three or four days, in which time it will give a charming whiteness to the skin. This tincture is made by drying gall in the sun, and infusing it in spirits of wine. It is well known that the dyers make use of this gall to cleanse their stuffs; for it is of a soapy nature, and will take spots out of cloths: it is also used by painters to give a brighter tinge to their colours. Some have applied the dung of an ox or cow, in the form of a poultice, to appease the pain of inflammations, especially those of the gout. In the German Ephemerides we are told, that several obstinate intermitting fevers have been cured by taking an infusion of the fresh dung in ale: it must be taken warm before the fit, and repeated two or three times when the first dose will not do: it causes a plentiful sweat. But these, as may be seen from what has already been said on this subject, are not the only advantages that this animal procures to man; he is a faithful, and most useful domestic. In former times he, together with the sheep, constituted the only riches of mankind, and still he is the basis of the wealth of states, which only flourish, and are supported by, the opulence of the earth, and the number of the cattle: these are the only real property we possess, all others, even gold and silver, being only arbitrary representations, monies of credit, which are of worth no longer than the produce of the earth gives them. The truth of this remark will be still more obvious in our account of that no less useful animal the cow.

The Cow is to be found, in some one of its varieties, in almost every part of the world: the few kind which subsist in Iceland, are without horns, though they were originally of the same race with ours. The Dutch bring frequently large quantities of lean cattle from Denmark, which they fatten on their own grounds; these are generally larger than their own natural breed,

and



and soon become fat. The cattle of the Ukraine have excellent pasture, and are considered as the largest breed of all Europe. On the rich mountains of Switzerland these animals grow to a very great size. In France, where they are permitted to have no grafs but what is thought unfit for horses, they dwindle and grow lean. In Barbary, and the provinces of Africa, where the pasturage is short, and the ground dry, the cows are small, and give but little milk. In Ethiopia they are exceeding large. In some parts of Persia and Tartary they are of a prodigious stature, and in others exceeding small. There are greater plenty of Beeves in Europe than in any other parts of the world, especially in the northern regions; for, in general, they can bear cold better than heat, for which reason they are not numerous in the southern countries. As for America, there were none before they were carried thither by the Europeans. But of all countries, India and England produce the largest Oxen. Our breed of horned cattle has been so greatly improved by a foreign mixture, that we cannot, with any degree of certainty, point out the original kind of these islands. Those which may be supposed to have been purely British, are much smaller than those on the northern part of the European continent. On the Highlands of Scotland the cattle are extremely small, and many of them, males as well as females, are hornless: the Welch runts are considerably larger; and the Cornish cattle are of the same size with the latter. The large species, now cultivated through most parts of England, are either entirely of foreign extraction, or our own improved by a cross breed with that kind; and the large hornless cattle, bred in some parts of our country, came originally from Poland. Of all quadrupeds, this animal seems most liable to alteration from its pasture, or according to the richness or poverty of the soil. In some they grow to a great bulk, in others they appear as diminutive: in almost every part of the world they are to be found large or small, in proportion to the richness or poverty of their food. The differences, however, in the size of this animal, are less remarkable than those of its form, its hair, and its horns. In many of them the variation is so very extraordinary, that they have been considered as a different kind of species, when they are, in reality, the same. It is evident, therefore, that the differences between the Cow, the Urus, and the Bison, are merely accidental. Nature, which has given horns to some cows, and not to others, may also have given an hump to the Bison, or enlarged the Urus.

In those species of animals, which man has formed into flocks, and where the multiplication is the principal object, the female is more necessary, more useful, than the male: the produce of the Cow is a benefit which grows, and which is renewed every instant: the flesh of the calf is a delicious dainty for the table; the milk makes, in a variety of particulars, part of our food, and for our children; butter relishes the greatest part of our victuals, and cheese is acceptable both to the rich and poor. Many of our English peasants have (we should say had) no other possession than a Cow, and they are little more than nominal possessors of its advantages. If they pretend to taste its flesh, their whole stock of riches is at once destroyed: veal is a delicacy they cannot make any pretensions to, therefore they are obliged to fatten its calf for sale; even its milk is wrought into butter and cheese for the tables of their masters, a very small share being appropriated to their own use. In Germany, Poland, and Switzerland, every peasant keeps two or three Cows for his own benefit. The meanest of them annually kills, at least, one for his own table, which is hung up, after having been salted, and is thus preserved all the year round. But in this country, where the opulent riot in luxury, the poor, in these iron times, are not able to purchase meat, and even butter is considered by them as an article of extravagance.

The flesh of the Cow is not so good as that of the Ox; though when well fattened, especially if young, it is not much inferior; and this is commonly called heifer-beef. Veal contains a great deal of oil, and a fixed salt,

which is found in this meat that supplies the London markets, the young animal being permitted to lick salts and chalk, which he does greedily, to correct the acridities of his stomach. This the fatteners of veal suppose brings on the calf more speedily in his flesh, and also whitens the veal; but, however this may be, it does not certainly improve its flavour. Veal is nourishing, well tasted, easy of digestion, and rather keeps the body open than otherwise. It agrees very well with weakly constitutions, and persons who do not use much exercise. The lungs of a calf are pectoral, and proper to abate acrimonious humours in the breast. Calves feet are the same, from which is made the jelly, prescribed often in consumptive habits. Broth made of the knuckle of veal is a good restorative. Veal marrow and suet, being emollients, are applied outwardly to soften hard swellings, and to supple contracted tendons. Runnet is nothing else but the curdled and acid matter that is found at the bottom of the stomach of young calves; the use of it is universally known, for the curdling of milk in order to make cheese. Some say the black cows, some that the red, give the best milk, but that the white yield most: however, when a Cow is chosen, she ought to be young, fleshy, and have a brisk eye. She goes with young nine months, and brings forth at the beginning of the tenth: but, by human industry, her time may be altered; for, by a particular management, we have veal in London at all seasons of the year.

Cow's milk is of universal use, and is preferred for food before that of any other animal where it can be had. It is very balsamic, and good in many diseases, especially when attended with a falling away of the flesh. Good milk is neither too thick nor too thin; its consistence should be such, that when we take a drop, it should preserve its roundness without running, and in colour it should be a beautiful white: that which is inclinable to blue or yellow is worth nothing: its taste should be sweet, without any bitterness or sourness: it is best during the month of May, and during the summer, than in winter; and it is never perfectly good but when the cow is of a proper age, and in good health. The milk of young heifers is too thick, that of old cows too dry, and during the winter it is too thick. The milk of cows which are hot is not wholesome, any more than that of one near her time, or that has lately calved. Whey, having an opening quality, is an excellent remedy in many disorders, particularly those of the malignant sort, either alone, or with the juice of oranges and lemons. It may be given safely to women with child, and is very serviceable when the viscera are obstructed. In most cases it should be taken twice a day with a little sugar, or the syrup of violets, for a month's time. However, it will be best, in most distempers, to mix it with the juice of those herbs that are recommended against the peculiar disorder. Some, of late, have been very profuse in the praise of sugar milk. This is made by boiling four or five quarts of milk with an ounce of cream of tartar very finely powdered. As soon as the milk is curdled, the clear part must be filtered, and clarified with the white of an egg; then it must be evaporated to a pellicle, or thin skin, and the vessel must stand in a cool place for a day or two; after which you will find crystals at the bottom, and on the sides of the vessel: these are called sugar, on account of their sweetness, and they are good in all cases where milk is useful.

Butter, as almost every one knows, is extracted from cream, and they have both the same virtues. Cheese is made of the grossest part of the milk with runnet. It is hard of digestion, if eaten to excess; but the contrary in a small quantity, and when made of new milk. In Ireland the greatest part of their cheese is made of sheep's milk, and coloured with saffron. Dr. Boerhaave affirms, that very old strong cheese has sometimes inflamed the gums and throats of those who have eaten of it; from whence he concludes, that it must be bad for the stomach and intestines: but many of our most eminent physicians, than whom there are none better in the world, are of a contrary opinion, and old Cheshire-



cheese, by many experiments, has been proved to be a powerful resolvent. Butter is of great use in all the northern countries of Europe, except France, where they have no great opinion of it, because they say it weakens the stomach, takes away the appetite, and creates sickness; but in England the consumption of it is very great.

In short, there are scarce any parts of these animals, which we have described, without their uses in commerce, manufactures, and medicine. The hide serves for boots, shoes, and many other conveniences of life. Vellum is made of calves-skin; and gold-beater's skin is made either of a thin vellum, or the finer part of the guts of the ox. The hair, mixed with lime, is a necessary article in building. Combs, handles for knives, buttons, drinking vessels, &c. are made of the horns. Carpenters glue is made of the chips of the hoofs, and the parings of the raw hides. The bones are used by mechanics, as a substitute for ivory, by which many neat conveniences may be purchased at an easy rate. From the feet is procured an oil much used in the harness and trappings belonging to a coach, and the bones calcined afford a fit matter for tests, used by the refiner in the smelting trade. The blood is said to be an excellent manure for fruit trees, and it is the basis of the colour called Prussian blue. To their suet and fat we owe, in some manner, our artificial light. Thus we see man changes the natural state of animals, by forcing them to obey him, and rendering them useful to him. When God created the first human pair, in his own image, male and female, "he blessed them, and said unto them, be fruitful, and multiply, and replenish the earth, and subdue it; and have dominion over the fish of the sea, and over the fowl of the air, and over every living thing that moveth upon the earth." But we must distinguish the empire of God from the domain of man. The Creator of all beings is the only master of nature; man has no command over the productions of the creation; he can have none over the heavenly bodies, over the revolutions of the globe which he inhabits: nevertheless, the divine ray, with which man is animated, ennobles and raises him above all other material beings. This spiritual substance, far from being subject to matter, has the power of making it obey, and though it cannot command all nature, it presides over particular beings. God, the source of all light and intelligence, rules the whole universe with infinite power; man has only power limited to small portions of matter, and is master of individuals only. Yet, this empire which man has over animals, is an empire revolution cannot overthrow; it is an empire of the spirit over matter; it is not only a right of nature, a power founded on unalterable laws, but a gift of God, by which man may learn every moment the excellence of his being; for he does not rule them because he is the most perfect, the strongest, or the most artful of animals. Was he only the first of the same order, the second in rank would unite together to dispute the empire with him; but it is from the superiority of his nature, and the divine fiat, or will, that man reigns and commands: he is master over all animals, because, like them, he not only has sensation and motion, but is a partaker also of the divine image: he possesses the light of reason; is capable of governing his actions, concerting his operations, and of overcoming force by swiftness, by cunning, and by the employment of his time. Nevertheless, among animals, some appear more or less familiar, more or less savage, more or less gentle, more or less ferocious than others. Let us compare the docility and submission of the dog, with the cruelty and ferocity of the tiger; one will appear to be the friend of man, the other his enemy. His empire then over animals is not absolute. How many species can escape his power by the rapidity of their swiftness, by the obscurity of their retreats, by the distance which the element they inhabit places between them and mankind? How many other kinds escape him from their minuteness? And, in short, how many others are there, who, far from respecting their sovereign, openly attack him, without mentioning those insects that insult him with their

stings, those serpents that carry poison and death in their bites, and many other troublesome creatures, that seem to exist only to form a shade between good and evil, and to make man to comprehend how little respectable his fall has made him? On the other hand, as in time the human race multiplied, and spread over the face of the earth; and as, by the aid of arts and of society, man has been able to conquer the universe, he has, by degrees, destroyed, or reduced to a small number of individuals, every hurtful and voracious species of wild beasts; he has opposed animals to animals, and conquered some by fraud, others by force, till, by frightening them away, and attacking them by every rational method, he has arrived at the means of safety, and established an empire, bounded only by inaccessible places, hidden solitudes, frozen mountains, and obscure caverns. These reflections, and the whole of our observations on the present subject, naturally direct our thoughts to the spring of divine benevolence, the great cause and source of all our comforts in this life. The ox knoweth his owner, the ass his master's crib; and shall the intelligent spirit of a man be ungrateful? No; let us omit no proper opportunity to acknowledge and adore the never-failing goodness of our Creator, who satisfieth the desires, wants, and appetites of every living creature, and diffuseth throughout the whole creation his varied bounties with a liberal hand.

#### NATURAL HISTORY of the U R U S.

**T**HERE are some parts of Europe where the Urus, in its wild state, is the largest of all the beeeve kind. Julius Cæsar, in his commentaries on the Gallic war, affirms that, in size, it is little less than the elephant, though of the colour and shape of a bull, and that he is exceeding strong and swift. Other authors affirm the same, and say this animal grows to an amazing size, and is very fierce. The Urus is chiefly to be met with in the province of Lithuania. He is quite black, except a stripe mixed white on the top of the back, which extends from the neck to the tail; the eyes are fierce; the horns short, thick, and strong; the forehead is generally decorated with a large quantity of black, curled hair, and many of them have beards of the same; the neck is short and thick, and the skin has a strong odour resembling musk. The female, though much smaller than the male, is superior in size to the largest of our oxen; but her udder and teats are so extremely small as hardly to be perceived. Upon the whole, however, this animal differs but little from the tame bull: there are, indeed, some trifling varieties, which have probably been produced by his wildness, or the richness of the pastures where he is found. There is a smaller race of the Urus in some parts of Spain. But whether they are of the large enormous breed of Lithuania, or the smaller Spanish race; whether with short or long horns; whether with or without long hair on the forehead; they are every way the same with what our common breed was, when in the forest, and before they were reduced to a state of servitude. The flesh of the Urus is much inferior to that of the Ox, and the most valuable part of him is the hide, which serves for various purposes.

#### NATURAL HISTORY of the B I S O N.

**T**HIS animal is called by the Lithuanians Suber, and by the Germans Wisent; but the Bison differs from others of the beeeve kind, in the neck and shoulders; for he has the appearance of a lion before, with a horrid mane, and has a very long beard under his chin. His head is large, broad, and short; his nose obtuse; his nostrils very open; his eyes full, and of a fierce aspect; his neck robust and thick; his forehead large; his horns point forward, but, are surprizingly big, and far asunder; his body is bulky and unweildly; his legs short, and thick; his tail reaches to the ground; and on the middle of his back is a bunch hairy and high







QUADRUPEDS

*The Zebra*



*The American Buffalo*



*The Gazelle*



*The many Horned Sheep*



*Thornton sculp.*



high like that of the camel. Those who hunt him are very dextrous and careful, for he is a cruel animal and afraid of nothing. The inhabitants of Lithuania usually make pits, and cover them over with boughs and earth; then they get on that side of it which is opposite to the Bison, who immediately makes at them, and tumbles into the pit-fall, where he is killed. There is no hunting him unless in forests, where there are trees large enough to hide the hunters. His tongue is said to be so rough, that if he touches a part of a man's garment, he seldom or never fails of getting him in his power, and tearing him to pieces. He is much offended with a red colour; for which reason they sometimes throw down a red cap, or some such thing, and he will never leave it till he has trod it all to bits. Linnæus calls the Bison a Beeve with horns turned upwards, a bunched back, and a very long mane and beard. The body is covered with long hair as far as the shoulders.

The Bison is found in all the southern parts of the world; throughout the vast continent of India; and throughout Africa, from mount Atlas to the Cape of Good Hope. This animal seems chiefly to prevail in all these countries, where they are found to have smooth soft hair, travel a great pace, and supply in some degree the want of horses. They are very expert and docile: many of them bend their knees to take up and set down the burthens with which they are loaded; and they are treated by the natives of those countries with a tenderness proportioned to their utility. Among the Hottentots, Bisons are highly esteemed: they are considered, as their protectors and servants, companions of their pleasures and fatigues, and assistants in attending their flocks. The animal lives in the same cottage with his master, conceives an affection for him; and in proportion as the man approaches to the brute, so the brute seems to acquire human sagacity. The Bisons, or Cows with a hump, differ greatly from each other in the several parts of the world. The wild ones are larger than the tame. Some have horns, others have none; some are extremely large, and others very small: but when tame, they are all equally docile and gentle. The Bisons of Malabar, Abyssinia, and Madagascar, are large; those of Arabia, Petræa, and most parts of Africa are small. The American Bison is rather less than that of the antient continent; its hair is longer and thicker, and its hide softer.

#### NATURAL HISTORY of the BONASUS.

**T**HIS is a very bulky and unweildy animal; larger than our bull, and furnished with a mane like a horse. The horns are so short as not to exceed a span in length, and turned in such a manner as to be quite unfit for wounding: the head is short and broad; the forehead flat; the nose obtuse; the nostrils wide; the ears long and broad; the legs thick; and the tail long. The colour is a deep tawny, except the forehead, and breast, which are white. The mane is of a darker colour than the body, and hangs down quite to the breast. He has no teeth in the upper jaw before, like others of this kind. His legs are covered with hair, and he bellows like an ox. When pursued he does not attempt to defend himself with his horns, but kicks, and discharges his dung to a great distance against his pursuers; but this is only when he is disturbed and enraged, for, at other times, he has no such power. This animal is found in Lydia, Phrygia, and in many of the warm climates.

#### NATURAL HISTORY of the ZEBU.

**I**N Africa is an animal called the Zebu, or Barbary Cow, which, for shape, approaches nearer that of a stag, than an English Cow. The hair is reddish, and of the same thickness near the points as at the roots, which is very unusual. The horns likewise are not exactly like those of common cows, for they rise very near each other, because the head is extremely narrow

in that part: they are a foot long, very thick, and bend a little backwards; of a black colour, and twisted almost like a skrew, except near the ends, where the channels are almost obliterated. The tail is thirteen inches long, including the tuft of hair at the end, which is about three inches. The ears are like those of an Antelope, and without hair, except on the side which is partly white. The eyes are so high, and so near the horns, that the head seems to be almost without a brow. Their teats are two in number, very slender, short, and quite different from those of our cows. There is also a swelling nearly like that of the camel. This is probably the same animal mentioned by voyagers to be found in the Comera islands, near Madagascar, which some call a buffalo, and others a cow. They are very extravagant in praise of the bunch, or large hump, as they call it, upon the back, affirming that it is very delicious eating. Belon is also of opinion, that it is the buffalo of the ancients; but this is a circumstance of no great consequence, and his conjecture is but feebly supported. We have already observed, that naturalists have given various names to animals, which are, in reality, the same, and differ only in a few accidental circumstances. The wild and tame cow, that belong to Europe; and that of Asia, Africa, and America; the Bonafus, and the Urus, the Bison, and the Zebu, in our opinion, are all one and the same: they all propagate among each other, and, in a few generations, the hump wears away, and few vestiges of savage fierceness remain. Of all animals, except man, the cow seems most extensively propagated. It is equally an inhabitant of the frozen fields of Iceland, and in the scorching deserts of Lybia. It is domestic and tame in civilized countries, savage and wild in those thinly inhabited, but is capable of being made useful in all.

#### NATURAL HISTORY of the BEEVE-HOG.

**T**HERE is an animal of the beeve kind, that appears to be of a middle nature between a beeve and a hog, and is indiscriminately called a Beeve-Hog, or a Hog-Cow. The female of this species was shewn a few years ago in England. It is of the height of an ass, but broader and thicker; and the colour is of a whitish dun, or a cream colour. The hair on the body is very thin, and more like that of a hog than a cow. From the neck to the tail is a row of bristles down the spine of the back, not quite so strong as those of the hog. The tail has stiff bristles at the end, and appeareth much like that of an ass. The head is very long, and the snout, though pretty much like that of a cow, is a little inclining to that of the hog kind. On the top of the head are two black flattish horns, that bend inwards like a bow, and lie pretty close to the neck. There is no udder like that of a cow, but there are two teats between the hind legs, which are not visible unless you stoop down to view them, for they are close to the body, without any appearance of an udder. In short, it is a very uncommon animal, and seems not to have been described hitherto by any author. Those who exhibited this creature in England, called it a Bonafus, and said it was brought from the East Indies; but it is the business of such people, to impose upon the ignorant, and therefore they seldom give the right name to those animals that are not well known: one in his bills mentions two beavers among his collection, which were no other than racoons.

#### NATURAL HISTORY of the BUFFALO.

**B**Y comparing the tame Buffalo with our cow, we perceive a striking likeness between them, both in their form and nature: they are equally submissive to the yoke, both live frequently under the same roof, and are employed in the same domestic services: their figures in some particulars are not unlike; yet, no two animals



animals can be more distinct, or appear to have a stronger antipathy to each other. The Buffalo is less beautiful than an ox; his figure is more clumsy, and he carries his head nearer the ground; his limbs are not so fleshy, nor his tail so well covered with hair; his body is shorter and thicker; his legs higher; his head smaller; his horns not so round, but compressed; one side being sharp with a tuft of hair hanging down between them; his skin is also harder, thicker, and blacker, with less hair; his flesh is disagreeable to the taste and smell; the colour is usually a dark grey, but a great variation is to be observed in this particular; but there is commonly some white under the belly, and about the forehead. Under his throat the flesh hangs very loose. This animal is a native of the East, but has been introduced into Italy, and some other parts of Europe, where it is employed in agriculture, and carrying burthens, being guided by a ring, thrust through its nose. It is said that two buffaloes, yoked in a waggon, will draw more than four strong horses: their heads and necks being naturally bent downward, they are the better fitted for the draught. But though they may be pretty well tamed, they always retain something of their natural fierceness. It is certain that our cow refuses to breed with a Buffalo, which it so nearly resembles, though she will propagate with the bison, to which, in point of form, it has but a distant similitude. The milk of the female, though produced in great abundance, is not so good as that of our cow; yet, in the kingdom of Naples she is kept chiefly for the sake of her milk, and of this in warm climates, the greatest part of their cheese and butter is made. But the Buffalo, being apt to be mischievous, is less fit to be trusted loose in the fields where people walk. The veal of this animal is not better eating than our beef; but the hide is well known for its softness, thickness, and impenetrability. The horns are greatly used in the pope's territories for making of combs. Dellon, who saw a great many Buffaloes on the coast of Malabar, in the East Indies, informs us, that he is larger than an ox, but much of the same shape, only his head is somewhat longer and flatter; his eyes, which are almost white, a great deal larger; and the horns in some are ten feet long. It must be confessed, the Buffalo, upon the whole, is an ugly animal; he has scarce any hair on his body; his pace is very slow; but, as we have before observed, he will carry or draw a very heavy burthen when tamed.

The wild Buffaloes are very dangerous animals, and frequently tear and crush travellers to death. They are least to be feared in the woods, because, in the pursuit, they often get entangled in the branches of the trees, which affords time to escape. There is hardly any other method to avoid them, for they are extremely swift, and such excellent swimmers, as to cross large rivers without any difficulty. All large animals of the torrid zone are very fond of the water, and in the midst of the pursuit, frequently plunge in to cool themselves. The Negroes of Guinea, and the Indians of Malabar, delight much in hunting and destroying them; but they never attempt to face the Buffalo openly; their usual method is to climb up a tree, and from thence shoot at him; nor do they venture to come down till they have effectually dispatched him. The Buffalo is found wild in many parts of Africa, and India; from India they were brought into Lombardy, so early as in the reign of king Agilulf, in 616. They are said to be found wild in Apuglia; and to be common in hot weather on the sea shore between Manfredonia and Barletta. They grow to an enormous size, some say, twice the bulk of our largest oxen. There is a pair of horns in the British Museum, probably from one of these animals: one of them is six feet six inches and an half in length; it weighed twenty-one pounds, and the hollow contained five quarts of water. The female produces but one at a time; but they are very different in the times of gestation; for the cow goes but nine months, the Buffalo twelve.

The small Indian Buffalo is the size of a calf six months old, and resembles an English bull in shape, but has very short horns, and a hump between the shoulders. They are used in the East Indies for drawing coaches instead of horses: the nose is broad, flat, and without hair: on the muzzle are some straggling hairs; and those on the sides of the nose are whitish: the horns which are small, and of a dark colour, appear but a little above the rough hair on the top of the head: the ears are much longer and larger than the horns, being of a flesh colour, and without hair on the inside: the hair is sleek all over the body, and the head, neck, back, tail, are of a bluish colour. The loose skin on the neck is white, and the belly is covered with so small a quantity of lightish hair, that it shews the flesh colour. The legs are of a light colour, spotted and marked with black, and become gradually whiter towards the feet. The tuft of hair at the end of the tail is black, and the hoofs of a dark brown, shaped like those of our cattle.

In the northern parts of America is another animal of the beeve kind, which differs from the rest in some particulars. He is larger than the ox, and has short black horns, and a large beard under his chin: his head is so full of hair, that it hangs down over his eyes, and gives him a terrible appearance. He has a bunch on his back, extending from the shoulders to the haunches. The hump is covered with reddish long hair, and the rest of the body with a kind of black wool, which is in great esteem. He has a large breast, a short tail, and hardly any neck; but his head is larger than that of a bull. At the sight of a man, he will run away, and a whole herd of them will make a precipitate flight, if they see but a single dog. He has so quick a smell that he is not to be approached but on the leeward side: however, when he is wounded, he becomes very furious, and will turn back upon the hunters. The flesh of the female is good, and the hide excellent for many purposes. The savages make bucklers of it, which, though extremely light, are hardly to be penetrated by a musket ball. In the western parts of New France, on this side the Mississippi, they are famous for hunting this animal. The hunters range themselves into four lines, and form a very large square; afterwards they set fire to the grass, which at that time is very long and dry: the animals draw closer together, as the fire runs along the lines, and, as they are much afraid of fire, they naturally fly from it, and at length make one body. The hunters then attack them briskly, and seldom suffer many to escape.

In South Carolina is also a species of wild Cow, or Buffalo, called by some writers the American Bison. They are of low stature, but weigh more than our largest oxen, and the hide is too heavy for the strongest man to lift from the ground. They range in droves, feeding in open savannahs morning and evening, and in the heat of the day retire to shaded streams of water, gliding through thickets of tall canes; which, though a hidden retreat, yet, as their heavy bodies cause them to make a deep impression with their feet in moist sand, they are often traced and shot by the Americans. Their hoofs, more than their horns, are their offensive weapons, and whoever opposes them is in no small danger of being trampled into the earth. Their flesh is very good, and of a high flavour, differing only from common beef, as venison does from mutton. The bunch on their shoulders is thought, by the Americans, to be the most delicate part.

The Siberian Cow, is another animal of the above kind, though extremely different from any of the beeves already mentioned. The male has neither horns nor mane; but he has curled hair on the top of his forehead, and his tail resembles that of a horse. His whole body, except the legs and face, is covered with long straight hair, but he has not a hump on his back. He is found near the lake Baykal, in Siberia, and probably in the neighbouring countries.



## C H A P. III.

## The NATURAL HISTORY of ANIMALS, of the SHEEP and GOAT Kind.

*Containing a descriptive Account of the SHEEP, and the GOAT; the many HORNED SHEEP, the BROAD TAILED; the STREPSICHEROS; the GUINEA SHEEP; the MOUFFLON; the GOAT, and its Numerous Varieties.*

WE cannot expect, that any two races of animals should exactly correspond in every particular, because no two animals are found entirely the same. The goat and the sheep are apparently different in the form of their bodies, in their covering, and in their horns. They may from hence be considered as two different kinds, with regard to all common and domestic purposes. But if we come to examine them closely, and observe their internal conformation, no two animals can be more alike: their feet, their four stomachs, their suet, their appetites, all are entirely the same, and shew the similitude between them: but what makes a stronger connection is, that they propagate with each other. The buck goat is found to produce with the ewe an animal that, in two or three generations, returns to the sheep, and seems to retain no mark of its antient progenitor. The sheep and the goat, therefore, may be considered as belonging to one family; and were the whole races reduced to one of each, they would quickly replenish the earth with their kind.

The conformation of the sheep and goat internally, as we have just observed, is entirely the same; nor is their structure very remote from that of the cow kind, which they resemble in their hoofs, and in their chewing the cud. Indeed, all ruminating animals are internally very much alike. The goat, the sheep, or the deer, exhibit to the eye of the anatomist, the same parts in miniature, which the cow and the bison exhibit in the great. But, the differences between these animals are, nevertheless, sufficiently apparent. Nature has obviously marked the distinctions between the cow and the sheep kind, by their form and size; and they are also distinguished from those of the deer kind, by never shedding their horns. Indeed, the form and figure of these animals, if there were nothing else, would seldom fail of guiding us to the kind; and we might almost, upon sight, tell which belongs to the deer kind, and are to be ranked with that of the goat. However, the shedding the horns of the deer annually, and the permanence in the sheep, draws a pretty exact line between the kinds; so that we may hold to this distinction only, and define the sheep and goat kind as ruminants of a smaller size, that never shed their horns. If we consider these harmless and useful animals in one point of view, we shall find that both have been long brought into a state of domestic servitude. Both seem to require protection from man; and are, in some measure, pleased with his society. The sheep, indeed, is more serviceable of the two; but the goat has more sensibility and attachment. The attending upon both, was once the employment of the wisest and best of men; and those have been supposed the happiest times, in which these animals were considered as the chief object of human attention. In the patriarchal age, the goat was a great favourite, and it continues such in Ireland, and in other countries, to this day. But, in England, the sheep has been principally regarded. We shall, therefore, make this the first object of our attention; and the goat with all its varieties, will then follow in proper order.

## NATURAL HISTORY of the SHEEP.

FROM the defenceless structure of this quadruped, which disqualifies it for combat, and the slowness of its motions, which renders it incapable of flight, it

should seem as if providence intended, that it should find safety under the protection of man. In its servile state, the Sheep appears to be the most stupid of all animals, and to be divested of all inclinations of its own. Every animal has a peculiar turn of countenance, which generally marks its nature. The Sheep seems to have none of those traits which betoken either cunning or courage. It appears a large mass of flesh, supported upon four small straight legs, ill suited for carrying such a burthen. It is easily fatigued, and frequently sinks under the weight of its corpulency. Those which feed upon a more fertile pasture, and grow fat, become entirely feeble; those without horns are duller and heavier than the rest; and those that have the longest and finest fleeces are subject to the greatest number of disorders. The ram has but feeble arms; his courage is nothing but a petulance, useless to himself, inconvenient to others. The Weather Sheep are still more fearful than Ewes: it is through fear that they gather so often in troops: the smallest noise to which they are unaccustomed is sufficient to make them fly and get close together; yet, they know not, at times, how to fly from danger; nor do they even seem to feel the inconvenience of particular situations: they continue wherever they are, either in rain or snow; and to oblige them to stir, they must have a chief to walk before them: but this guide will remain with the rest of the flock, without motion, if not driven from it by the shepherd, or the dog which guards them, who, in fact, watches for their safety, defends, directs, and separates them, assembles them together, and communicates to them motions not their own. The sheep is equally insensible and absurd, when bred up tame in the house, or familiarized with its keepers; it then becomes mischievous, butts with its head, and evidently shews that it is more fitted for the necessities than the amusement of mankind. We know of one instance only, in which this animal testifies any attachment to its keeper. In many parts of the Alps, and even in some provinces of France, the shepherd and his pipe are still continued. The flock is penned up every evening in order to preserve them from the wolves; and, at sun set, returns homeward, with his Sheep following him, seemingly pleased with the sound of the pipe. The Arcadian life is thus preserved, in all its antient purity, in countries uncultivated by the fine arts; but where an inequality prevails by nominal distinctions, or in civilized countries, the shepherd is generally some indigent wretch, who, for a paltry pittance, only guards those luxuries, of which he is not permitted to participate.

The Ram, or male, is cloven footed, horned, and ruminating. When perfect in his kind, he has a broad well-covered forehead, hazel eyes, large ears, horns twisted and turned backwards, a wide breast and shoulders. He sometimes lives to the age of fifteen years. Some Rams as well as the Ewes, have no horns. When two of them meet together, they sometimes engage very fiercely. When castrated, they are called Weathers, and they then grow larger, become fatter, and their flesh is much sweeter. The Ewe, or female, is not remarkable for its beauty, though, when perfectly clean, it has its share of comeliness. The head is small, oblong, and narrow at the mouth; the horns flat, and annulated on the surface; the eyes large, and prominent; the ears patulous. It is clothed with a deep, substantial, and frequently curled wool, obscuring the shape of the body, and making it seem much clumsier than it really is. The tail is short in comparison of that

extent



extent to which it grows in some parts of Arabia, where it spreads into a vast breadth as well as length, and trails after the animal. Like all other ruminants, Sheep want the upper fore teeth, but they have eight in the lower jaw: two of these teeth drop, and are replaced at two years old; four of them are replaced at three years old; and all at the age of four years. There are some breeds in England, called leather-mouthed, that never change their teeth. The Ewes are said to live about ten years; however, they seldom reach that age, but they will propagate their species during the whole of that time. They have generally but one lamb at a time, though some will produce two, three, and even four. The first is generally less valuable than those of a second or third production; the third being always supposed to be the best. They bear their young five months; and, if housed, will bring forth at any time of the year. In a flock of four hundred sheep, every Ewe will know its own lamb. They yield generally great plenty of milk for five or six months. This is tolerable food for poor people in the country, but not equal to goat's milk, which is less glutinous. When mixed with cow's milk, butter, and good cheese are made of it in Ireland, and some parts of Great Britain. In Wales the goat has the pre-eminence, being better suited to the nature of that country. The flesh of the Ram is always ill-tasted, that of the Weather rather insipid, whilst that of the Ewe is the most succulent, the sweetest, and best, of all common mutton. In dry soils, and in high grounds, where wild thyme, and other odoriferous herbs abound, the flesh of the Sheep is of a much better quality, than when fed in low plains and humid valleys, unless these plains are near the sea; for then all the herbs imbibe a saltiness, and the flesh of mutton is no where better than in salt meadows. The milk is also of a finer flavour and more abundant; and as nothing is more pleasing to the taste of these animals than salt, so not any thing is more salutary, when given to them in moderation. The age of the Ram may be known by his horns, which shew themselves in the first year, and frequently from the birth: they grow every year a ring, which is a mark round, and continues growing till death. The Sheep commonly have no horns; but they have boney prominences on their heads, in the same parts where the horns of the Rams grow: there are, notwithstanding, some sheep which have two, and even four horns. These are five or six inches long, but less turned than those of the Ram; and when there are four horns, the two exterior ones are shorter than the two others.

Sheep will thrive upon almost any ground, and for that reason are preferred by many before the larger cattle. The farmer should always buy his Sheep from a worse land than his own, and they should be large boned, and have a strong greasy wool, curling close and well. These Sheep always breed the finest wool, and are the most approved of by the butcher for sale in the market. The feeding Sheep with turnips is one great advantage to the farmers, from the crops they raise them: they soon fatten, but there is some difficulty in getting the sheep to feed on them: the old ones always refuse them at first, but the lambs fall to at once. The common way, in some places, of turning a flock of Sheep at large into a field of turnips, is very disadvantageous. There are three other ways of feeding them on this food, all of which have their several advantages. The first is, to divide the land by hurdles, and allow the Sheep to come upon such a portion only at a time, as they can eat in one day, and so advance the hurdles farther into the ground, daily, until the whole crop be eaten. This is infinitely better than the former random method, though they never eat them clean even this way, but leave the bottom and outsidies scooped in the ground: the people pull up these with iron crooks, and lay them before the Sheep, but, by reason of their foulness, they eat but little of them, and what they eat does not nourish them like the fresh roots. The second way is by inclosing the Sheep in hurdles, as in the former; but in this they pull up all the turnips they suppose the sheep can eat in one day, by which method there is less expence, and less

waste. The third way is to pull up the turnips, and remove them in a cart or waggon to some other place, spreading them on a fresh place every day: by this means the Sheep will eat them up clean, both roots and leaves. Many advantages, besides saving the expence of hurdles, and the trouble of moving them, will result from this method. There are in this kingdom tracts of ground, known by the name of downs, whereon are chiefly fed large flocks of sheep. Experience has abundantly evinced, that though the grass there is naturally short, it is excellent food for Sheep: and as the welfare of these creatures is of the utmost consequence to one of the most essential branches of the commerce of England, very great caution should be used in making any alteration in their diet, until it be well proved, by fair experiments, that a richer pasture does not injure their fleeces. We would therefore recommend, in the strongest manner, to gentlemen who have estates bordering on such downs, particularly on that extensive tract, called Salisbury-Plain, which reaches from the westward of Marlborough to the sea, to bring some of their sheep into natural, or artificial, rich pastures, and to keep them there for some generations. The word generations will not imply a long space of time for such experiments, if we consider in how few years his succession may take place. A lamb reared from its birth on burnet, for instance, will, in two years, bring a lamb, which, in two years more, brings forth young, and the sixth year may see the third generation: so that by the end of seven or eight years the fact may be ascertained.

Every year the flock should be examined, in order to find out such as begin to grow old, and are intended for fattening; for as they require a different management from the others, so they should also be formed into a separate flock. They should be turned out in summer before sun rising, in order to feed on the grass while moistened with the dew. The fattening of Weathers is greatly forwarded by a quantity of moisture, and nothing more obstructs it than the heat of the sun; so that about eight or nine in the morning they should be brought back, before the great heat begins, and salt given them to excite thirst. About four in the afternoon they should be led a second time into cool and moist places; and after two or three months, they will have the appearance of being full of flesh; indeed, they are generally fattened as much as they can be; but this fat proceeding only from the great quantity of water they have drank, may be said to be little more than a bloated humour, which would, in a short time, turn to the rot, and can be prevented only by killing them while they are in this state of fatness: besides, their flesh, far from being firm and juicy, is extremely insipid and flabby: in order, therefore, to make good flesh, besides letting them feed on the dew, and giving them plenty of water, they should have at the same time more nourishing food than grass. They may be fattened in every season, by only keeping them apart in a sheep-house, and feeding them with the meal of barley, oats, wheat, beans, &c. mixed with a moderate quantity of salt: but in whatever season they are fattened, or in whatever manner, they must be disposed of without delay; for they cannot be fattened twice, and they will die by diseases of the liver.

Every year the whole flock, weathers, ewes, and lambs, are sheared. In hot countries, where the creature may be laid bare without danger, the wool is not sheared, but plucked off, and often they yield two fleeces in the year. In France, and the colder climates, it is cut only once a year with large shears, but the sheep have part of their fleece left, as some defence against the severity of the climate. The season for this operation is in the month of May, after having thoroughly washed them, that the wool may be as clean as possible. In the month of April it is too cold, and if delayed until June or July, the wool would not grow sufficiently during the remainder of the summer, to secure them from the inclemency of the winter. The weathers have generally more wool than the ewes, and it is also better. That of the neck, and the top of the back, is the prime; that



that of the thighs, tail, belly, throat, &c. is not so good. White wool is also preferred to the brown and black, as it may be dyed of any colour. A considerable advantage may also be drawn from sheep by folding them; that is, by leaving them for a proper time on lands intended for improvement. In order to this, ground must be inclosed, and the flock shut up in it during the summer: by this means the dung, urine, and heat of the body of these creatures, will, in a short time, bring the ground into heat, whether exhausted, or naturally cold and barren. A hundred sheep will, in one summer, meliorate eight acres of ground, which will continue its fertility six years. There is hardly any part of these animals, setting aside the fleece, that is not useful to mankind; they defend us principally from the cold, and adorn our tables with numerous and agreeable repasts: the flesh is delicate and wholesome food; gloves, and different articles of our apparel, are made from the skin: it is also used for covers to books; parchment is likewise made from it: of the entrails are formed strings of various musical instruments: the milk, being thicker than that of cows, yields a greater quantity of butter and cheese; and the dung is a very rich manure. The sheep and lamb are the hieroglyphics of innocence; therefore St. Cyprian, in his Book of Envy, says, "Let us remember by what name Jesus Christ calls his people; by what appellation he distinguishes his flock. He calls them sheep, that Christians may equal lambs in innocence. He calls them lambs, that, by simplicity of spirit, they may imitate the harmless disposition of those animals. Opulence, felicity, and plenty, are represented by the sheep, and a mild, open-hearted, unblemished person, by a lamb."

In Ireland, of all the quadrupeds, the sheep is the animal best adapted to pay the rent. It is true, sheep require great attention, but at the same time little bodily trouble. The chief care should consist in their cantonment for food, in which the Irish farmers are extremely negligent; for they station them promiscuously over the land, inclosing only the fattening grounds, which is done but badly, and other cattle suffered to mix with them; whereas sheep, in their rearing and fattening state, should be by no means suffered to perambulate a variety of pasture. But countries and circumstances differ; for though we do not approve of extensive uninclosed pastures in Ireland, it seems in Spain they do well enough: the flocks there are small, as in France; but they have a right of commonage in that country, perhaps, not in any other civilized one that we know of. There, it is a constant practice with the shepherds, soon after shearing-time, to set out with their flocks, generally consisting of one hundred each, and to pass from one province to another, feeding them both on pasture and corn-lands: the meadows, and some other particular enclosed lands, as parks belonging to the nobility, and clergy especially, only excepted. These itinerant shepherds often travel three or four hundred miles from their habitations with their small flock. They sometimes take part of their family, provisions, a tent, some well-trained dogs; and are never stopped, if they keep the sheep on the open lands; and do not often return home till after lambing time. They have generally one third, or half the profit of the flock, for their hire.

In England, as we have observed, the work of shearing sheep is done about the middle of May; but some will defer it till at or after Midsummer; but this should be avoided, as very bad consequences often ensue; for by this late shearing, the maggot has an opportunity of breeding in their skins, which frets them in such a manner, that they will pine away, and lose all their flesh. We cannot but in general approve of the early shearing of sheep, beginning with the fattest; but no certain day can, with reason, be fixed for doing this work; for our seasons differ so much in various years, that next year, in the beginning of May, the weather may be so warm, as to be very proper for the work; and, in the year following, the middle of the same month may, on account of the cold, be too soon to begin. The best regulator for their work, as well as

many others, would be the state of vegetation, from repeated observations of some particular tree or plant, on a particular soil and exposure; for to bring plants to a certain state, requires always a certain degree of heat, and this is sooner or later, according to the season. Every work of husbandry, in spring at least, might be regulated in the same manner, and that to great advantage; for nature is an unerring guide.

The taste of the flesh, the fineness of the wool, the quantity of the fuet, and even the size of these animals, vary very much in different countries. In France they chiefly abound in the dutchy of Berry: those in the neighbourhood of Beauvais, and some other parts of Normandy, are the largest and fullest of fuet. In Burgundy they are very good; but the best are those that feed on the sandy coasts of maritime provinces. The wool of Italy, and that of Spain and England are finer than that of France. In Poictou, Provence, the neighbourhood of Bayonne, and some other parts of France, are sheep which seem to be of a foreign breed: they are stronger, larger, and have a great deal more wool, than those of the common breed. Those sheep are also more prolific than the ordinary sort, it being usual with them to have two lambs at a time, and to year twice in the year. The rams of this breed, when mixed with the common breed of the country, produce an intermediate race, partaking of the two from whom they proceed. In Italy and Spain, the number and variety in the breeds of sheep is still greater; but all must be considered as forming one and the same species with our sheep; though this so numerous, and diversified species, scarcely extends beyond Europe. Those long and broad-tailed creatures, common in Africa and Asia, and by travellers called Barbary sheep, seem to be of a species different from ours, as well as the American, Vigonia, and Lama.

From our antient writers it doth not appear, that the breed of this animal was cultivated among the Britons. The inhabitants of the interior parts of this island went entirely naked, or were covered only with skins: those who lived on the sea coasts, and were the most civilized, affected the manners of the Gauls, as in the histories of those times there are not the least traces of manufactures among the Britons. This negligence does not appear wonderful, when it is considered, that they were uncivilized, their wants few, and those easily satisfied; but it is surprizing, that when we had long cultivated a breed of sheep, whose fleeces were superior to those of other countries, we still neglected to promote a woollen manufacture at home. That valuable branch of business lay for a considerable time in foreign hands, and we were obliged to import the cloth manufactured from our own materials. After many unavailing efforts among our kings, to introduce and preserve the manufacture at home, Henry the Second granted a patent to the weavers in London, wherein he directed, that if any cloth was found made with a mixture of Spanish wool, it should be burned by the mayor. Notwithstanding this, the weaving business advanced so slowly, that Edward the Third was obliged to permit the importation of foreign cloth in the beginning of his reign: but shortly after, by encouraging foreign artificers to settle in England, and instruct the natives in their trade, the manufacture so far increased, as to enable him to prohibit the wear of foreign cloth. Many salutary edicts operated, by degrees, towards the establishing this trade among us; but the grand rise of all its prosperity is to be dated from the reign of Queen Elizabeth, when the tyranny of the duke of Alva, in the Netherlands, drove numbers of artificers into this country for refuge, who were the founders of that immense manufacture we carry on at present: it is, however, supposed by many, that the woollen manufacture is upon the decline among us, and that the cloth now made is neither so firm, so fine, nor so serviceable, as it has been. No country in the world is better supplied with materials than Great Britain, and those adapted to every species of the cloathing business; and though the sheep of this island afford fleeces of different qualities, yet they may all be used in some branches of it. Herefordshire,



fordshire, Devonshire, and Cotswold downs, are celebrated for producing sheep with exceeding fine fleeces. The Lincolnshire and Warwickshire kind are very large, and exceed any for the quantity and quality of their wool. Lincolnshire yields the largest sheep in Great Britain, and, in that county, it is no uncommon thing to give fifty guineas for a ram. Suffolk breeds a very valuable kind. In the northern parts of this kingdom, the fleeces are inferior in fineness to those of the south. The Yorkshire hills furnish the looms of that country with great quantities of wool; and that which is taken from the neck and shoulders they mix with Spanish wool, and use in some of their finest cloths. The wool which Wales produces is coarse, though it is more extensively useful than the finest Spanish fleeces; for every one must acknowledge the universal benefit of the flannel manufacture. In Ireland the sheep are found to vary like those of Great Britain. In the South and East they are large, but their flesh is rank: those of the North, and the mountainous parts, are small, and their flesh is sweet. Their fleeces also differ in proportion. Scotland breeds a small kind, and their fleeces are coarse. No country, however, produces such sheep as England, either with larger fleeces, or better adapted for the business of cloathing. The woolly sheep, such as we have among us, are found only in Europe, and some of the temperate provinces of Asia. When transported into warmer countries, either into Florida or Guinea, their wool degenerates into hair, and their flesh has a different flavour: in extreme cold countries, they seem equally strangers and helpless; and though they subsist both in Guinea and Greenland, yet they do not appear like natural inhabitants of either. Sheep also differ greatly in different countries, of which the following account may entertain our numerous readers.

#### The MANY HORNED SHEEP.

The first variety of the domestic kind, after our own, is to be seen in Iceland, Muscovy, and the coldest climates of the North. This, which may be called the Many Horned, or Iceland sheep, resembles that of our own breed, in the form of the body and the tail, but differs considerably in the number of horns: they have generally four, and sometimes they are known to have eight, growing from different parts of the forehead. This animal is large and formidable in appearance, and nature seems to have fitted it for a state of war; it is, nevertheless, like the rest of its kind, gentle, mild, and timid. Its wool is long, smooth, and hairy; very different from that of the common sheep; it is of a dark brown colour, and, under its outward coat of hair, it has an internal covering, fine, short, and soft, and which rather resembles fur than wool. There is a kind from Spain, with two upright, and two lateral horns, the body covered with wool, with yellowish hairs in the fore part of the neck, fourteen inches in length: such a sheep was shewn alive in London a few years ago.

#### The BROAD TAILED SHEEP.

This animal is very common in Tartary, Arabia, Persia, Barbary, Syria, and Egypt. It is principally remarkable for its large and heavy tail, which often weighs from twenty to thirty pounds. It is sometimes a foot broad, and is usually supported by a small board, that goes upon wheels; whence arose the common report of their having carts to carry their tails. The upper part of the tail is covered with wool; but it is bare underneath; and the natives, who reckon it a great delicacy, are careful to preserve it from injury; these tails are of a substance between fat and marrow, and are eaten with the lean of the mutton. In the temperate climates their fleeces are, as in our breed, soft and woolly, but they are hairy in the warmer latitudes; yet the enormous size of their tails they preserve in both. In Aleppo and Syria, these sheep are usually kept in yards, to preserve their tails from injury.

#### The STREPSICHEROS.

This is a native of Crete, and the other islands of the Archipelago, and differs from the English sheep in

having erect and spiral horns. It is of the size of the common sheep, and resembles it in form. The head is oblong, broad at the top, and very small at the nose; the eyes are large and prominent; the ears patulous: the horns are not at all like those of our sheep; they are short, straight, very sharp at the point, and elegantly marked with a spiral twist all the way up; the neck is short and thick; the legs are very long in comparison of those of our sheep; they, and the face, are covered with short and rigid greyish fur; the body with a soft white curling wool. In other respects they are like the English sheep.

#### The ANGOLAN or GUINEA SHEEP.

This is a very singular species from the common sheep, and their form is so different, that they might be considered as animals of another kind, if they were not known to breed with them. It is somewhat larger than the common sheep: the head is shorter and more obtuse, and, on the hinder part, swells out in a very singular manner: the ears are very long and broad; not carried erect, but hang down: the horns are formed like those of our ram, and turn round till their points approach near the eyes: the neck is short, having the flesh of the under part of it loose, like a dewlap, and it is ornamented with a kind of mane of long hairs. The body is not covered with wool, but with rough hair, like that of the goat-kind. This animal is a native of Guinea, but generally found in all the tropical climates both of Africa and the East Indies. Of all the domestic kinds, the Guinea sheep seem to come nearest to a state of nature: they are stronger, larger, and fleet, than the common breed, and therefore better adapted to a precarious forest-life. Like the rest, however, they seem to rely on man for support, being of a domestic nature, and subsisting only in the warmer climates.

#### The MOUFFLON.

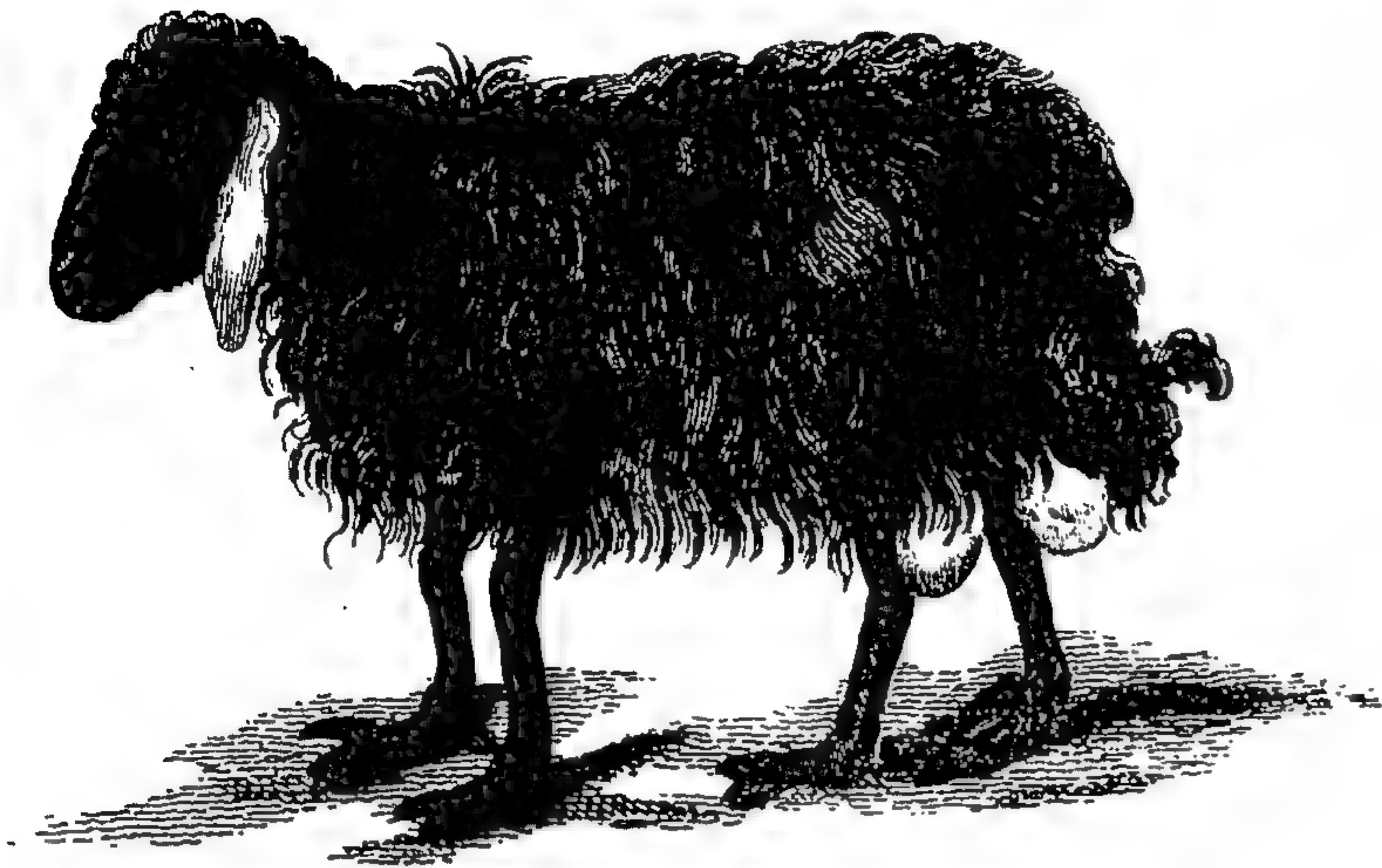
The varieties of the sheep kind, which have been subdued, and brought into a state of servitude, are capable of producing among each other; the peculiarities of their figure have been the result of climate and human cultivation; but not any of them appear to be sufficiently independent to live in a state of savage nature. They may, therefore, be considered as a degenerate race, formed by the hand of man, and propagated solely for his benefit. While man thus cultivates the domestic kinds, he drives away and destroys the savage race, which are more headstrong, and less beneficial. These are to be found only in a very small number, in the most uncultivated countries, where they live in solitude, and subsist by their native swiftness and strength.

The Moufflon, that preserves all the marks of being the primitive race of sheep, is to be found only in the more uncultivated parts of Greece, Sardinia, Corsica, and the deserts of Tartary; however, it has been actually known to breed with the domestic animal. Though covered with hair, the Moufflon nearly resembles a ram; it has the eyes placed near the horns; and its ears are not so long as those of the goat; in its horns it also resembles the ram, and in all the particular contours of its figure; they are of a yellow colour; they have three sides as in the ram, and bend backwards behind the ears in the same manner: the muzzle, and the inside of the ears, are whitish, tinged with yellow. But, upon the whole, the form of this animal seems more calculated for strength and agility than the common sheep; for the Moufflon can live in a savage state, and maintain itself amidst all the beasts that live by rapine. Many, on account of its speed, have been inclined to rank it rather among the deer kind than the sheep; but they are certainly mistaken, as the Moufflon has a mark that entirely distinguishes it from that species, being never known to shed its horns. There is a strong resemblance between the male and female of this species; but the female is less, and her horns never grow to that prodigious size they are of in the wild ram. Such is the sheep in its savage state; a noble, bold, and beautiful animal; but the most beautiful creatures are not always



QUADRUPEDS

*Broad-tailed Sheep.*



*Stoufflen.*



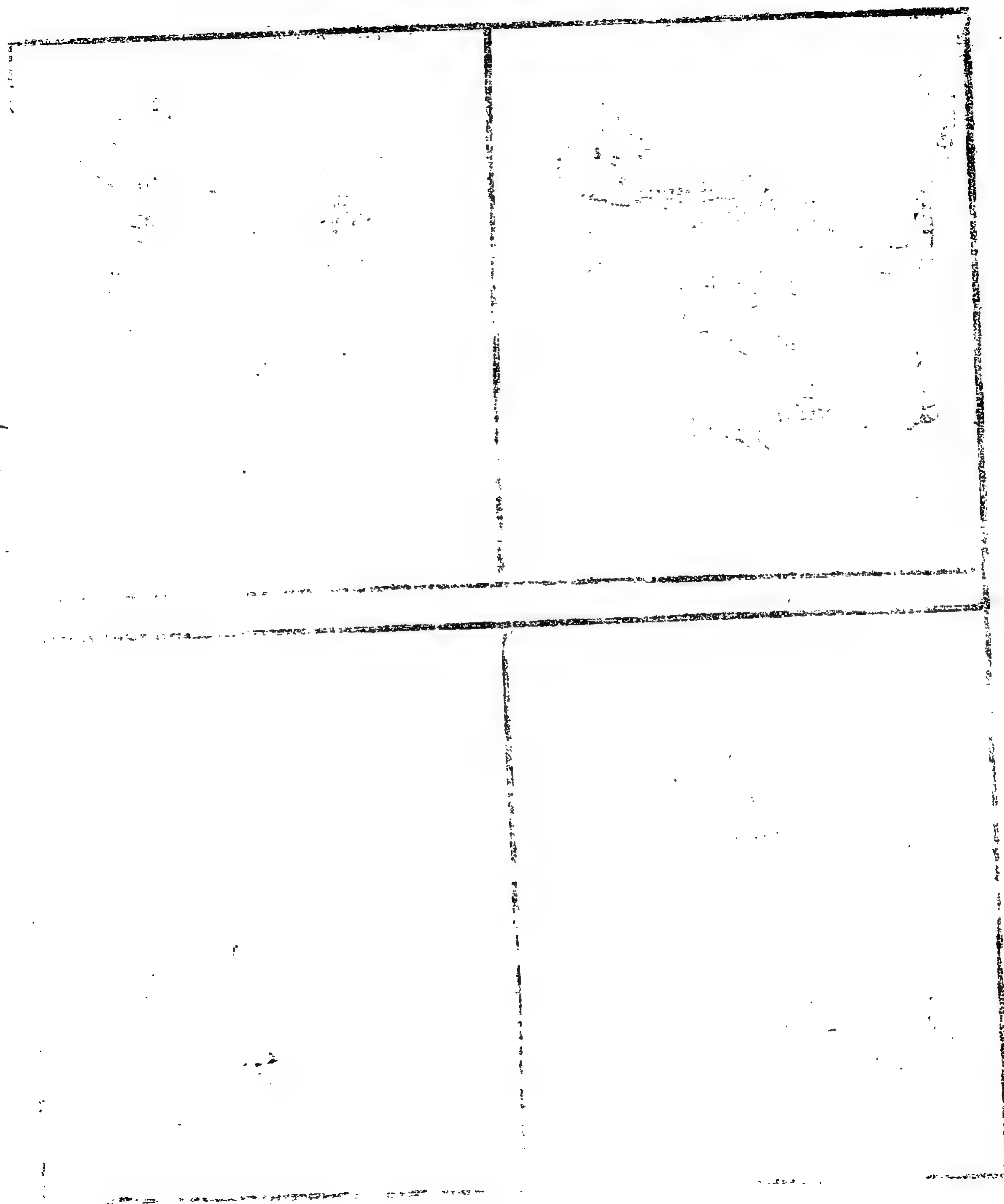
*Syrian Goat.*



*Cape Sheep.*









always the most useful. Human industry, to improve its utility has destroyed its grace. Some years ago a moufflon was kept in the French king's menagerie.

#### NATURAL HISTORY of the GOAT, and its numerous VARIETIES.

**T**HIS animal, in every respect, is more adapted to a life of savage liberty than the sheep; it is naturally more lively; yet readily attaches itself to man, and seems sensible of his caresses. It is not easily confined to its flock, but chuses its own pastures, and loves to stray remote from the rest. It delights in climbing precipices; is often seen suspended upon an eminence hanging over the sea, upon a very small base, and even sleeps there in security. Nature has, in some measure, fitted it for traversing these declivities with ease, the hoof being hollow underneath, with sharp edges. It chuses the healthy mountain, or the shrubby rock; its favourite food is the tops of boughs, or the tender bark of young trees: it seems less afraid of immoderate heat, and bears the warm climates better than the sheep: it sleeps exposed to the sun; and seems to enjoy its warmest fervours: neither is it terrified at the storm, or incommoded by the rain: immoderate cold alone seems to affect this animal, and is said to produce a vertigo, with which it is sometimes affected.

The common Goat is nearly the size of the sheep: the head is oblong, considerably broad at the top, and thence gradually taper to the extremity of the nose, where it is small and sharp: the eyes are large and bright; the nostrils wide; and the mouth large: the neck is short and thick; the body bulky; the legs short, robust, and very stiff: the hoof is divided and brown: the fur is deep; the hairs rigid, waved, but without the least appearance of wool: the beard is long, and hangs down from the chin: the horns are but little contorted, and of a deep brown hue. The general colour of the Goat, in its wild state, is a pale dun; but in those that are kept tame, the varieties, in this respect are endless. The he Goat is accounted best that has an ample body, soft, long, thick, shining hair: a full short neck, hanging, heavy ears, and fleshy thighs. He is a salacious animal, very strong, and sometimes runs with such force against a man with his head, that he will almost beat him down. The common goats have a rank smell. They are of the ruminating kind, have no fore teeth in the upper jaw, and are cloven footed.

The flesh of this animal, if old, has a disagreeable smell, and bad taste; therefore is seldom or never used for food; but the milk of the female is sweet, nourishing, and medicinal: not so apt to curdle upon the stomach as that of the cow; and therefore preferable to those whose digestion is weak. The peculiarity of this animal's living, which feeds upon grass, hay, and on the fruits, leaves, and barks of shrubs, gives the milk an agreeable flavour, different from that of the cow and the sheep. It is remarkable, that Goats are not only proud in their gait, but exceeding delicate feeders; for if you only breath upon any thing, which otherwise they would eat from your hand, they will turn away and refuse it. In several parts of Ireland, and the highlands of Scotland, the Goat makes the chief possession of the inhabitants. On those mountains, where no other useful animal could find subsistence, the goat continues to glean a sufficient living, and supplies the hardy natives with what they consider as varied luxury. They lie upon beds made of their skins, which are soft, clean, and wholesome; they live upon their milk, with oat bread: the flesh, indeed, they seldom taste of, as it is a delicacy which they find very expensive; however, the kid is considered, even by the city epicure, as a great rarity; and the flesh of the female goat, when about two years old and properly prepared, is reckoned by some as no ways inferior to venison. Most of our modern compilers, who are exceeding careful to tread steadily, without the least deviation, in each other's steps, tell us, that the poor of different countries convert part of the milk into butter, and some into cheese, but an instance

of this never came within our knowledge, either in England, Scotland, or Ireland; and, however this may be; it is certain, Goat's milk being thin, produces little or no cream; at no times a sufficient quantity for the purposes of raising a stock of either butter or cheese. In this manner, even in the wildest solitudes, the poor find comforts of which the rich do not think it worth their while to dispossess them. In those mountainous retreats, where the landscape is composed only of a dreary scene of rocks, heaths, and shrubs, that speak the wretchedness of the soil, these simple people, attended by their faithful flocks to awful solitudes, there find all the necessities of life, and are not without even their feasts and pleasures.

The she Goat brings forth two at a time, or three at the most: but in warmer climates; although she degenerates, and grows less, yet she becomes more fruitful, being found frequently to produce three, four, and five at a single delivery. Their best breeding time is generally delayed till the age of two years, or eighteen months at least. One buck is sufficient for an hundred and fifty goats; for his libidinous appetite is excessive; but this ardour brings on a speedy decay, so that he is enervated in four years at most, and even becomes old before he reaches his seventh year. The female, like that of the sheep, continues five months with young; and, in some places, bears twice a year. As these animals are apt to stray from the flock, no man can attend above fifty of them at a time. They are fattened in the same manner as sheep; but, after having used every precaution, their flesh is never so sweet, in our climate, as that of mutton. Between the tropics it is otherwise. The mutton there becomes lean and flabby, and the flesh of the goat is much superior to it: in some places the latter is cultivated in preference to the former. We therefore find this animal in almost every part of the world, as it seems fitted for the necessities of man in both extremes. Towards the north, where the pasture is coarse and thin, the Goat is fitted to find a scanty subsistence; between the tropics, where the heat is excessive, the Goat is fitted to bear the climate, and its flesh is found to improve. From the hair of this useful animal, the white perukes are made; for which purpose that of the he Goat is most esteemed; that which grows on the haunches is generally the longest, the whitest and the thickest. The skin, in proportion to its good or bad colour, will sell from a guinea to about two shillings. The Welch Goats are larger, and have longer and finer hair than those of other mountainous countries; besides they are generally white, and those of France have short reddish hair, and little horns. Of these, the country people make handles for their tucks and knives. The suet of this animal is in great esteem for making candles, which are far superior in whiteness and goodness to those made from that of the sheep or the ox, and consequently bears a better price. The skin is much used in the glove manufactory, especially that of the kid. In the army it covers the horseman's arms, and a kind of bag is made of it for carrying the foot soldiers provisions. In some books of husbandry, Goats are recommended to lie among horses; their smell, as supposed, preventing many distempers. We shall now give an account of the most remarkable varieties to be found in this species of domestic animals. Of these are, first, the Goat of Angora, called by others,

#### The GOAT of NATOLIA.

This animal has ears longer than ours, and broader in proportion. The male has horns of about the same length with the goat of Europe, but black, and turned very differently, going out very horizontally on each side of the head, and twisted round in the manner of a cork-screw. The horns of the female are shorter, and encircle the ear somewhat like those of the ram. They are of a dazzling white colour, and all the hair is very long, thick, fine, and glossy, which, indeed, is the case with almost all the animals of Syria. But those we are speaking of are found only near Angora, Beibazar, and Congua, in Asiatic Turkey. In the last place they are brown and black; and in the two first of a silky fineness, and silver.



silver-whiteness, in curled locks of eight or nine inches in length, which is the basis of our fine camblets. The hair is imported here in the form of thread; for the Turks will not suffer it to be exported raw, as the spinning gives employment to multitudes of poor. This variety is confined to a district of two or three days journey in extent; if they change climate, the hair grows coarser. The goatherds are very attentive to them, and are perpetually combing and washing them. Nothing can exceed the beauty of the stuffs which are made from the hair of almost all the animals about Angora.

#### The LONG-EARED SYRIAN GOAT.

An animal this greatly resembling the common goat in its form, but very remarkable for having ears which almost hang down to the ground. These are sometimes so troublesome, that the owners cut off one, to enable the animal to feed with more ease. The horns do not exceed two inches and a half in length; are black, and bend a little backwards. The colour of the hair is like that of the fox, and there are two excrescences under the throat, like the gills of a cock. These animals are chiefly kept round Aleppo, to supply the people with milk, which is sweet, and well tasted. They are driven through the streets from April to September, in the same manner that the asses are in London, and their milk is sold to the inhabitants as they pass along.

#### The SMALL GOAT of AMERICA.

This is of the size of a kid, but the hair is as long as that of the ordinary breed. The horns which do not exceed the length of a man's finger, are thick, and bend downwards so close to the head, that they almost penetrate the skin.

#### The BLUE GOAT.

At the Cape of Good Hope is an animal, called by this name. In shape it resembles the domestic, but is considerably larger, being nearly of the size of a stag. Its hair is very short, and of a delightful blue; but it loses a great deal of its beauty when the animal is dead. It has a very long beard; but the horns are not so long in proportion as in other goats, being turned spirally, in the manner of a cork-screw. It has very long legs, yet well proportioned; and the flesh is well tasted, but lean. For this reason, in that plentiful country, it is chiefly killed, on account of its skin. It is a very shy animal, and seldom comes near the Dutch settlements; but they are found in great abundance in the more uncultivated parts of the country. Besides these, they are found, in this extensive region, of various colours, many of them being spotted, beautifully, with red, white, and brown.

#### The JUDA GOAT.

This is called by some the Whidaw Goat. It is found in Africa, and resembles ours, except in size, it being much smaller. The Juda Goat is common in Guinea, Angola, and all along the coasts of Africa. It is not much larger than a hare, very fat, and its flesh has a delicious taste. In that country it is universally preferred to mutton.

Such are the varieties of the species of goats, which we thought it incumbent on us to particularize; yet, in our opinion, these animals seem all of one kind, with very trifling distinctions between them. It is true, they differ in some respects, such, as having neither the same colour, hair, ears, or horns; but it ought to be laid down as a rule in natural history, that neither the horns, the colour, the fineness, or the length of the hair, or the position of the ears, are to be considered as making an actual distinction in the kinds. These are accidental varieties, produced by climate and food, which are known to change even in the same animal, and give it a seeming difference of form: but, when we see the shapes, the inclinations, and the internal conformation of seemingly different creatures nearly the same; above all, when we see them producing among each other; we then have no hesitation in pronouncing the species, and

asserting that these are of the goat kind, with which they are so materially connected.

But there are others nearly resembling the Goat, of whose kindred we cannot equally ascertain. These are such as, being found in a state of nature, have not as yet been subjected sufficiently to human observation. Hence, it is impossible to determine, with precision, to which class they belong; whether animals of a particular kind, or merely the goat in its state of savage freedom. There are two kinds that have almost equal pretensions to this claim, namely, the Ibex and Shammoy.

#### The IBEX.

Both this animal and the shammoy-bear very near approaches to the goat in figure: they both have horns that never shed; and, at the same time, are more different from each other, than from the animal in question. From which of these two sources our domestic goat may be derived, is not easy to determine. We are of opinion, with a celebrated French naturalist, that the Ibex is the principal source; that our domestic goat is the immediate descendent; and that the shammoy is but a variety from that stock, a sort of collateral branch of the same family. We give the preference to the Ibex, because it has a more masculine figure, large horns, and a large beard; whereas the shammoy wants these marks of primitive strength and wildness: we think, therefore, that in their original state, our goat has taken after the male of the parent stock, and the shammoy after the female; and that this has produced a variety in these animals, even before they underwent human cultivation.

Both these animals, however, seem well fitted for their precarious life: they are both extremely swift, and capable of running, without fear or danger, along the ledges of the precipices; where the wolf and the fox, though driven by hunger, dare not venture to pursue them. They are both natives of the Alps, the Pyrenees, and the mountains of Greece and Crete: there they propagate abundantly, and continue to exist in spite of the hunter, and their other natural enemies.

The Ibex, in the shape of its body, resembles the goat; but his horns are much larger. They are bent backward, full of knots, and, it is said, a knot is added every year. He has a large black beard, and a thick warm coat of hair: his colour is brown: a streak of black runs along the top of the back; the belly, the thighs, and the back, are of a fawn colour: the sides are of a dark dusky colour: the body is not so large in proportion to the height of the common goat, but more resembles the deer kind: the legs are also like that animal, straight, slender, and elegant: but what is most singular in this animal is the surprising length of his horns, which often extend considerably beyond the rump, being more than equal to the neck and body in length: yet notwithstanding this incumbrance, it runs and leaps with an amazing force and rapidity, in those mountainous parts of Europe, where it is to be found.

#### The SHAMMOY.

The Shammoy is a wild inhabitant of the mountains of Dauphiny, of Piedmont, Savoy, Switzerland, Germany, Greece, and Crete; particularly of the country of the Grifons, where the horns may be seen fixed up in most of the inns. Though a wild animal, it is easily tamed. The large males feed at a distance from the rest, except at that season when they approach the females. They couple from the beginning of October to the latter end of November; and bring forth their young in March and April. The young ones keep with the dam about five months; if they are not separated by the hunters, or the wolves. They live between twenty and thirty years. They generally produce two, and seldom more than three at a time.

This animal is about the size of a goat, but in the shape of his body nearly resembles a stag: the belly, forehead, throat, and the inside of the ears are white; but over the eyes, on both sides there is a yellowish streak: the rest of the body is of a dirty blackish colour, and the tail



tail is black all over, and not white underneath, as that of the deer. Both male and female have horns above four inches long, the upper parts of which are turned back into a sort of hooks, black, and not very smooth; there being furrows running along, according to the length: the inside of them is filled with a solid bone, proceeding from the scull, and they rise from the fore-part of the head over the eyes. The hair for the most part is short like that of the doe. Some writers say, it is of an ash colour in spring; a dun colour, inclining to black, in autumn; and of a blackish brown in winter. The flesh of the Shammoy is good food, and he will yield about ten or twelve pounds of suet, far surpassing that of the goat in firmness and goodness.

Most animals are known to have some cry; the Shammoy has scarce any. He has a kind of feeble bleat, by which the parent calls its young; but when danger threatens, and he is to alarm the flock, he makes a hissing noise, which is heard at a considerable distance. This animal is extremely vigilant, having a piercing eye, and a very distinguishing smell. It is said, by this last sense, it can discover a man, if we suppose to the windward; at half a league distance, and gives the earliest notice. Upon apprehensions of danger, it begins its hissing note. Having reposed a moment after this alarm, the animal again looks round, and, perceiving the cause of his fears, continues to hiss by intervals, till it has spread the alarm to a vast distance. During this time, it seems violently agitated; strikes the ground with one of its fore-feet, and sometimes with both; bounds from rock to rock; turns frequently, and looks about; runs to the edge of the precipice; and, if it has still the enemy in view, flies with the utmost speed. The hissing of the male is much sharper and louder than that of the female.

These animals, like those of the goat kind, feed upon the best herbage, and select the most delicate parts of the plants, flowers, and buds. While they feed upon the succulent herbs, they drink but little, and chew the cud in the intervals of feeding. Heat is so offensive to them, that in summer they are found only in the caverns of rocks, amidst fragments of unmelted ice, under the shade of high spreading trees, or of hanging precipices—that face the North, and keep off the rays of the sun. Throughout the rigours of winter, they sleep in the thicker parts of the forest, feeding upon the shrubs and buds of the pine tree: they turn up the snow to seek for herbage; and, where they find it green, make a delicious repast. The more craggy and uneven the ground, the more they are pleased with their abode. They always ascend or descend in an oblique direction, and will throw themselves down a rock of thirty feet, fixing safely upon some protuberance, or fragment, on the side of the precipice, though it should be but just large enough to place their feet upon: in their descent, however, they strike the rock with their feet, to check the velocity of their motion. They are hunted, during the winter, partly for their flesh, and partly for their skins; the latter of which have been celebrated for their softness and warmth: but, at present, the leather, called shammy, is made from those of the tame goat, the sheep, and the deer. The chase of the Shammoy is a laborious employ; for they must be got at by surprise, and are shot with rifle-barrelled guns. In their stomach is often found a hairy ball, with a hard crust, and of an oblong form.

We are told by a person of veracity, that there are two sorts of Shammoy Goats in Switzerland, one of which is smaller and redder than the other, and never descends into the valleys, but continues on the most inaccessible mountains, during the whole winter. The other sort, which is larger and browner, sometimes comes down to the foot of the mountains, where it lives in winter on the ends of fir-tree branches. Many medicinal virtues are ascribed to several parts of this animal. The fat, mixed with milk, is said to be good in ulcers of the lungs; and the gall to strengthen, to cleanse ulcers of the cornea, and to take away spots. A stone is sometimes found in the stomach, which is now known to be little more than an absorbent. It is the size of a walnut,

of a blackish colour, and, when broken, has a fine smell. In the present enlightened age of physic, all these medicines are quite out of repute; and, although we have the names of several medicines procurable from quadrupeds, yet, except the musk, or harts-horn alone, we know of none in any degree of reputation. It is true, the fat, the urine, and even the dung of various animals, may be found efficacious, where better medicines are not to be had, and on this account we notice them in this work; but they are far surpassed by others, now used by our skilful practitioners, whose virtues we know have been confirmed, and whose operations have been fully ascertained by successive experiments.

These are the quadrupeds that more peculiarly belong to the Goat-kind. Each of them, in all probability, can breed with the other; and were the whole race extinct, except any two, they would be sufficient to replenish the world, and continue the kind. Nature, however, proceeds in her variations by slow and insensible degrees, and scarce draws a firm distinguished line between any two neighbouring races of animals whatever. Thus it is difficult to discover where the sheep ends, and the goat begins; and we shall find it a still harder task, to fix precisely the boundaries between the goat-kind, and the deer. In all transitions from one kind to the other, there are to be found a middle race of animals that seem to have somewhat of the nature of both, and that can precisely be referred to neither. The race of quadrupeds, called the gazelles, are of this kind: they are, properly, neither goat nor deer, and yet they have many of the marks of both: they make the shade between these two kinds, and fill up the chasm in nature.

The gazelles partake of both natures. Like the goat, they have hollow horns that never fall, which is otherwise in the deer; but, like the latter animal, they feed rather upon shrubs than grass. They resemble the roebuck in size, in delicacy of form, in the nature and colour of their hair, in the bunches upon their legs, which differ only in being upon the fore-legs in one, and on the hind-legs in the other. They seem, therefore, to be of a middle nature between these two kinds, or, to speak with more precision, they form a distinct kind by themselves. We shall endeavour to give a clear description of the animals of this class, whereby our readers will be able to discern their peculiar characters, and may judge for themselves concerning the genus, or tribe, to which they belong.

#### NATURAL HISTORY of the GAZELLE, OR ANTELOPE.

THE Gazelle, for the most part, is more delicately turned than even the roebuck; his hair as short, but finer, and more glossy. The hinder legs are larger than those before, as in the hare, which affords it greater security in ascending or descending steep places. Their swiftness is equal, if not superior, to that of the roe; but as the latter bounds forward, so these run along in an even uninterrupted course. Most of them are brown upon the back, white under the belly, with a black stripe, separating those colours between. Their tail is of various lengths, but in all covered with pretty long hair; and their ears are beautiful, well placed, and terminating in a point. They all have a cloven hoof, like the sheep; they all have permanent horns, and the female has them smaller than the male. Of all animals in the world, Antelopes have the most beautiful eyes, extremely brilliant, and yet so meek, that all the eastern poets compare the eyes of their mistresses to those of this animal. "You have the eyes of a Gazelle," is considered as the highest compliment a lover can pay. The feet of this animal are more cloven than those of most others, and are covered with hoofs of a horny substance, forming the two points of the toes, that are tied together by a skin which will stretch greatly. The female Gazelle has but two udders and two teats, and on each side of the udders, in the groin, are deep cavities, common.



common to several other animals, where the skin is without hair, the same as the teats, and from whence an unctuous matter is discharged. Under the hair of the Antelope the skin is black and shining, though in some greyish. The ears are large and bald within, where the skin is black, like polished ebony. The horns are likewise black, striped crossways: they are fifteen inches long, and near an inch in diameter at the bottom. At the points they are sharp. They turn a little outwards in some places, and in others inwards. Those of the male are bent a little more than those of the female, which are very round, but the former are flattish. At the root of them is a skin very hard, very thick, and full of blood vessels. The nose of the Gazelle is somewhat flat, like that of the goat, but more in the male than the female. The palate is covered with a hard skin in the form of long scales, and there are no fore teeth in the upper jaw, the Antelope being a ruminating animal. The fore-legs, about the part called the knee, is furnished with pretty long coarse hair, and here likewise the skin is thicker than in other parts, and seems to serve instead of a cushion to kneel down upon, like the callosity in the knee of the camel. The Gazelle is about the size of a roe-buck.

Of these quadrupeds, herds are to be met with of two or three thousand; but some of the different species assemble in small parties of five and six. They generally inhabit hilly countries: they browse and feed on the tender shoots of trees, like the goat, which renders their flesh delicious. Most of them are natives of those parts of the temperate zone, which lie so near the tropics as to form a doubtful climate. It is remarkable, that notwithstanding the warmth of North America appears suited to their nature, yet not a single species of them has ever been discovered in any part of the new world: but they are very numerous in Asia and Africa. The chase of these animals is a favourite diversion with the Eastern nations. Bernier informs us, that the greyhound, which is the fleetest of all dogs, is unequal in the course; and the sportsman requires the aid of the falcon, trained for the sport, to pounce the Gazelle, whereby his motions are impeded, and the dogs have an opportunity of overtaking him. In India and Persia, a kind of Leopard is made use of in the chase. It is not by swiftness that this animal takes his prey, but by the greatness of his springs; motions similar to that of the Antelope; but if in the first attempt the leopard should fail, the game escapes. There is another way of taking the Antelope, but which is neither so certain, nor so entertaining as either of the former. A Gazelle being bred up tame, is taught to join its own kind the moment it sees them: when, therefore, the hunter discovers a herd of them, he fixes a noose round the horns of the domestic animal, and, thus prepared, sends it among them. The tame animal no sooner approaches the wild ones, than the males sally forth to oppose him, and, butting with their horns, are caught in the noose. In this condition they frequently struggle till both of them fall to the ground, when the wild animal becomes an easy prey to the hunter, who either secures or kills him.

Under this head of the Gazelles, some naturalists have enumerated more than forty species, though M. Buffon makes them only twelve, but we shall confine ourselves to such, in which may be traced the distinguishing characters of this tribe; and yet, even in some of these, trifling distinctions only exist; but almost all have certain general agreements: they are all of an active and elegant make; of restless and timid dispositions; extremely vigilant; of great vivacity, and remarkable swift and nimble.

#### THE COMMON ANTELOPE.

This is smaller than the fallow deer or buck, yet resembles it in all the proportions of its body. It has upright horns, twisted spirally, and surrounded almost to the top with prominent rings: they are about sixteen inches long, and twelve inches distant from point to point. The colour of this animal is brown, mixed with red, and dusky: its belly, and the inside of its thighs,

are white; the tail is short, black above, and white beneath. The female is without horns. This animal is a native of Barbary. Its horns, when on the skull, are not much unlike the lyre of the ancients; and it appears, from many antique gems, that the sides of that instrument were frequently made of the horns of animals.

#### THE BLUE ANTELOPE.

While this animal ranges in its native woods, the colour of it is a fine azure blue; but, when dead, this changes to a bluish grey, with a mixture of white. The horns are twenty inches long, sharp-pointed, taper, and bending in an arch backwards; they are marked with twenty prominent rings, but are smooth towards their points. This kind of Gazelle, somewhat larger than the common buck, has long hair, a white belly, a tail seven inches in length, and a large white mark beneath each eye. It inhabits the interior parts of Africa; and is called by the Dutch, at the Cape of Good Hope, the Blawme Bock, or the Blue Goat. And this species of the Gazelles seems to connect, with great propriety, the genus of the goat with that of the deer.

#### THE GUIBA.

It resembles the Gazelles in every particular, except in the colour of the belly, which, as we have seen, is white in them, but in this is tawny, or of a deep brown. Its horns also are not marked with annular prominences, but are smooth and polished. It is also remarkable for white lists, on a brown ground, that are disposed along this animal's body, as if it were harnessed. Three of these point downwards, on each side of the rump. This kind of animals is a native of Africa, and may be seen in large herds feeding on the plains and woods of Senegal.

#### THE ALGAZEL.

Of this species of the Antelope, there are two kinds. One has straight, slender, annulated horns, having a black triangular spot at the base, bounded on each side with white. In the centre of the face is a similar spot, besides two others that fall from the eyes to the throat, forming a junction with that in the face, by a lateral band of the same colour. A black line extends from the neck to the loins, composed of hairs longer than the rest: the neck, back, and sides, are of a dark grey, and the breast and belly are of a lively white. The tail, which is about two feet long, is terminated with black hair. This animal resides chiefly in the plains, and inhabits Egypt, the Cape of Good Hope, Persia, Syria, Arabia, and India.

The other kind of Gazelle is of a red colour, having the breast and hinder parts white. The horns are long, slender, and upright, bending internally towards the top; and sometimes they are extremely full of undulations, though in others of the same species there are very few. Some Naturalists have supposed this to be the Leucorix of Oppian, of which two drawings are preserved in the British Museum; but there are certainly some material variations, though probably not sufficient to constitute a distinct species. This beautiful Antelope inhabits Egypt, Africa, Bengal, and some other tropical countries.

#### THE INDOSTAN ANTELOPE.

This animal is a native of the most distant parts in the Great Mogul's dominions. It chews the cud, rises, and lies down like the camel; and makes a kind of croaking noise, somewhat like the rattling of deer, at a certain time. This Gazelle is about four feet in height, and has a large lump on the shoulders, resembling that of the Indian ox. The horns are seven inches long, projecting forward: the neck, which is strong, has also a bend, like that of the camel, on the top of which is a short mane: the hinder parts resemble those of an ass: the tail, which is twenty-two inches long, is terminated with long hairs: the legs are slender: on the lower part of the breast the skin hangs loose, like that of a tow; the hair is short and smooth, in general of a light ash colour, though dusky in some places: under the



the tail, and beneath the breast, it is white; and on the forehead is a black spot, in the form of a diamond. Among all the writers on the subject of Natural History, two only, of our own country, have described this animal.

#### The WHITE-FOOTED ANTELOPE.

The height of this Gazelle, to the top of the shoulders, is about four feet; and it measures nearly the same in length, from the bottom of the neck to the insertion of the tail. It has short horns, bending a little forward; ears large, and marked with two black stripes: a small black mane, extending half way down the back: a tuft of long black hairs on the fore part of the neck; above which is a large spot of white; another on the chest between the fore-legs; one white spot on each fore-foot; and two on each hind-foot. The tail, of a moderate length, is tufted with black hairs. The female Gazelle is without horns, is of a pale colour, has a mane, and striped ears, like the male. Some of these animals have been imported into England, where, notwithstanding the difference of climate, they have been known to breed and thrive most surprizingly. A few years ago, a pair of them was living, and to be seen at Claremont, once the seat of the good old Duke of Newcastle, who was indefatigable in his exertions, and spent a great part of his fortune, to subdue the rebellious spirit of the Tories, and to secure, in spite of all their machinations, the succession in the illustrious line of Brunswick. The white-footed Antelope inhabits the interior parts of Indostan, in India, and is sometimes brought down to the British settlements by the natives, as a great curiosity.

#### The SWIFT ANTELOPE.

The length of this animal is nearly three feet ten inches, and the height two feet eight inches. The horns are round, eight inches long, and reverting at their extremities. This Gazelle varies in colour, but in general is tawny: the lower part of the sides, the belly, the thighs are white; and there is also a white spot on the fore part of the neck. It is a native of Senegal; the swiftest of this race of animals, as its name imports; but it is easily tamed. Ælian compares its amazing speed to the rapidity of a whirlwind.

#### The STRIPED ANTELOPE.

This Gazelle is nine feet long, and four feet high. The body is slender, as are also the legs: on the upper part of the neck is a short mane, and some long hairs hanging down from the throat to the breast: the horns are smooth, twisted spirally, and compressed sideways, with a ridge on one side following the wreaths; they consist of three bends, are three feet nine inches in length, and of a pale brown colour: they are close at the base, and two feet seven inches distant at the points, which are round and sharp. In the upper jaw is a hard, horny substance, disposed in ridges. The tail, which measures two feet, is brown above, white beneath, and black at the end. The colour of this animal is of a reddish cast, mixed with grey: it has a white stripe along the top of the back, extending from the shoulders to the tail; from this seven others branch out, four pointing towards the thighs, and three towards the belly; this and the breast are grey. The face, which is brown, is marked with two white lines, proceeding from the corner of each eye, and uniting above the nose. It is a native of Caffria; said, at the Cape, to possess uncommon agility, and the height of its leaps is really beyond conception.

#### The CHINESE ANTELOPE.

The size of this animal is nearly that of the roe-buck: it is of the same colour, and imitates its actions. Its length is about four feet and a half. The horns are nine inches long, bending a little in the middle, and reverting towards the end: they are annulated almost to their extremities, at which they are black and smooth; but the lower parts are of an opaque yellow colour. The head is rather clumsy; the nose obtuse; the ears small and sharp pointed; and, on the middle of the neck,

grows a considerable protuberance. On the approach of winter, the hair of this Gazelle grows long, rough, and hoary, so that at a distance it appears almost white; but, towards the beginning of May, it exchanges its coat for another, which is short, thick, and of a tawny hue. These Antelopes are very numerous in Chinese Tartary, on the frontiers of China and Thibet: they also inhabit the borders of India; and thousands of them herd together, on the vast plains beyond the lake Baikal. The flesh supplies the natives with food, and their skins with cloathing. They are naturally shy and timid, frequenting dry and sandy plains, and are so very fearful of water, that even the most imminent danger cannot compel them to enter that element. During the winter, they herd in great numbers, but separate again on the approach of spring. The Tartars hunt them with the utmost eagerness; for their horns form a considerable article of commerce, and are in high estimation among the Chinese.

#### The SCYTHIAN ANTELOPE.

This Gazelle is about two feet six inches high, and four feet nine in length: the tail is about three inches. The head resembles that of a sheep: the nose is very large, arched, and marked the whole length with a small line: the cutting teeth are placed so loose in their sockets as to move with the least touch. The horns of the male, which are of a pale colour, and the greatest part of them almost transparent, are a foot in length, bending a little in the middle; the points incline inwards, the ends are smooth, and the other parts annulated. The females are without horns, and extremely timid. If they are attacked either by dogs or wolves, the males place them in a circle, stand round, with their heads towards the enemy, and will defend them valiantly. These animals bleat like sheep, and their common pace is a trot: when they go faster it is by leaps and bounds; and they are as fleet as roe-bucks. Their skin, which is delicately soft, is excellent for gloves, and many other purposes. They are seen in flocks from five to ten thousand, between the Tanais and Boristhenes. The wild sheep, or ablavos, mentioned by le Brun, appear to be the same with these. The young are easily tamed; they are covered with a soft fleece, curled and waved, like new-dropped lambs. These animals are emigrants. Late in the autumn they collect in large bodies, and retire into the more southern latitudes. In spring, they again divide into small flocks, and wander northward, continually shifting their residence. Though they outstrip the swiftest coursers, they are often overtaken through timidity, and shortness of breath. While running, they seem to incline to one side, and scarcely to touch the ground; but no sooner does a dog give them the slightest wound, than they instantly tumble down, without the least appearance of resistance. The heat of the sun, reflected from the sandy deserts which they traverse, renders them almost blind in summer, or at least extremely short-sighted, and of course more liable to be caught. The hunters pursue them with guns, dogs, and black eagles, properly trained, and always approach them against the wind; lest, by their smell, they should have notice of impending danger.

#### The SENEGAL ANTELOPE.

The head and body of this Gazelle are of a light reddish brown, with a narrow black list down the hind part of the neck. The rump is of a dirty white. On each knee, and above the fetlock it has a dusky mark: the hoofs are small; and the tail, which is covered with coarse black hairs, is about a foot long: the horns are close at the base, but bend out greatly a little above, then, towards the extremities, approach again; but recede from each other near the points, which bend backwards: the distance, in the middle, is about six inches; above that four inches, and six at the points: they are seventeen inches in length, and eight in circumference at the bottom, surrounded with fifteen prominent rings; but they are smooth and sharp at the ends: its ears are seven inches long; its head eighteen,

large



large and clumsy. This animal inhabits Senegal, where the French call it "*La grande vache brune*;" the great brown cow.

#### The BUBALUS.

This is called by the moderns, The Cervine Antelope, an animal that seems to partake of the mixed natures of the cow, the goat, and the deer. It resembles the stag in the size and figure of its body, and particularly in the shape of its legs; but it has permanent horns, like the goat, and made entirely like those of the Gazelle kind. It also resembles that animal in its way of living: however, it differs in the make of its head, being exactly like the cow in the length of its muzzle, and in the disposition of the bones of its skull; from which similitude it has taken its name. This animal has a narrow long head; the eyes are placed very high; the forehead short and narrow; the horns about a foot long, black, thick, annulated, and the rings, of the Gazelle kind, remarkably large: the shoulders are very high, having a kind of bunch on them, that terminates at the neck: the tail is about a foot long, and terminated with tufted hair. In all other quadrupeds, except this and the elk, the hair tapers off from the bottom to the point; but in these, each hair seems to swell in the middle like a nine-pin. The Bubalus also resembles the elk in size, and the colour of its skin; but these are the only similitudes between them; for the one has a very large branching head of solid horns that are annually shed; whereas the other has black unbranching hollow horns that never fall. The Bubalus is common enough in Barbary, and has therefore been called the Barbary cow, though so widely different from that animal. It partakes more of the nature of the Antelope; like that, having the hair short, the hide black, and the flesh good for food.

#### The AFRICAN ANTELOPE.

This Gazelle, which is also called the Wild Goat of Grimmus, is about eighteen inches high. Its form is most elegant. The females have no horns; but those of the male are straight, black, slender, sharp-pointed, about three inches long, and slightly annulated at the base. Between these, in the middle of the head, is a hairy tuft standing upright. On both sides, between the eyes and the nose, are deep cavities, greater than those of the other kinds, which contain a yellow, oily fluid, coagulating into a black substance, that has a smell between musk and civet. This being taken away, the liquid again runs out, and coagulates as before. These cavities have no communication with the eyes, consequently this oozing substance can have nothing of the nature of tears. The colour of the neck and body of this animal is a dark ash colour, its belly white, and the tail, which is short, is black above, and white beneath.

#### The INDIAN ANTELOPE.

This animal is an inhabitant of the Southern parts of Africa, and appears to delight chiefly in ranging the mountainous districts of that country. Being naturally fat and fleshy, it is slow paced, when compared with many of the Gazelle species; and, consequently, falls an easier prey to the hunters, who greatly esteem its flesh. It is about five feet high, thick bodied, and strongly made; but, with slender legs, in proportion to its magnitude. The horns are thick and straight, marked with two spiral ribs, for a considerable way from the base, but smooth towards the points: the head is of a reddish hue, the forehead broad, and the nose pointed. On the forehead grows a line of long loose hairs, and on the lower part of the dewlap a considerable tuft of dusky hair. The body is of a bluish grey colour, slightly tinged with red. The tail, which is short, is covered with short ash-coloured hair, and terminated by a large tuft of long black hairs. The females, to which the Hottentots give the name of *Emphos*, have horns like those of the males.

#### The KEVEL.

Some call this Gazelle the Flat-Horned Antelope, it having very curious horns, flattened on the sides, and containing from twelve to fourteen rings. The Kevel is rather less than the roe-buck, but its eyes seem larger, and the horns are flattened as well in the female as the male. The colour of the upper part of the body is a reddish brown; the under and hinder parts are white: along the sides the two colours are divided from each other, by a strong dusky line, and on each knee is a tuft of hair. This animal is easily tamed, and its flesh is agreeable food.

#### The WHITE-FACED ANTELOPE.

In size this Gazelle is superior to the fallow-deer. It is upwards of five feet in length, and the height, to the summit of the shoulders, is three feet. The horns, which are similar to those of the flat-horned antelope, are sixteen inches long; five between the two tips: they are annulated in the male, but smooth in the female. The face, and the space between the horns, are both of a pure lively white: the cheeks and neck are of a fine bright bay: the back is ash-coloured, blended with red, having a dark stripe along the middle: the sides, flanks, and shoulders, are of a deep brown, a broad band of a darker colour dividing them from the belly, which is wholly white, as is a small space above the tail. This, which is about seven inches long, is covered with coarse black hairs. The white-footed Antelope is an inhabitant north of Cape of Good Hope; and a beautiful specimen of this Gazelle is preserved in Sir Ashton Lever's Museum.

#### The ANTELOPE Springing.

This Gazelle is rather less than the roe-buck. The horns are slender, annulated half their length, and twisted spirally; the ears are very long and dusky: the tail depends to the first joint of the leg: the face, cheeks, throat, and part of the under side of the neck, are white, with a dusky line passing from the base of each horn, beyond the eyes to the extremity of the mouth: the upper side of the neck, and part of the lower, as well as the back, the sides, and exterior parts of the limbs, are of a pale yellowish brown: the chest, belly, and inward parts of the same, are white; and both the sides and belly are divided by a broad chestnut band, which also runs down part of the shoulders: the upper part of the tail is white, and the lower black: the hindmost parts are white, and from the tail, half way up the back, is a white stripe, which the animal can contract, or expand, at pleasure. This Gazelle receives its name from the prodigious springs it takes, on the approach of a supposed enemy. It is an inhabitant near the Cape of Good Hope, but migrates annually from the interior countries. Two or three months it takes up its residence in the vicinity of the Cape, and then retires in troops of many thousands, attended by numbers of beasts of prey, which make dreadful havock among them. These migrations are owing probably to a deficiency of pasture, occasioned by the excessive droughts, to which some latitudes are subject, particularly that of Terra del Natal, where sometimes a single drop of rain does not fall during the space of two or three years.

#### The TRAGELAPHUS.

Some writers of Natural History have named this Gazelle the Siberian Goat. The skin of one, to be seen in the British Museum, is covered with a pale ferruginous hair, short on the sides, but longer on the top of the neck, and a little erect. On the shoulders, and on the lower side of the neck, the hair is fourteen inches long: beneath the hair is a kind of short wool, and on the knees a bare spot, which appears to have been occasioned by kneeling to lie down. The tail of this animal is short, but the horns are twenty inches long, eleven in the girth, in the thickest place, and nineteen inches distant from point to point. This Antelope has no beard; but its mouth, forehead, and ears, resemble those of a ram. The horns do not fall off annually like those



those of the Stag. They are found in the north-east part of Asia, Barbary, Sardinia, and Greece. Those of Corfica are smaller, and of a deepish brown, mixed with a rust colour: the belly, rump, and hind legs, are white; and the horns of the females are much smaller than those of the males. These animals live among the mountains, and run with great rapidity over the rocks. Those of Kamptchatka are so very strong, that ten men can hardly hold one, and their horns are sometimes so large, as to weigh thirty pounds. This Gazelle will grow to the size of a young stag: it propagates in autumn; and brings forth one at a time, sometimes two.

There is, in the mountains of the kingdom of Fez, another species of this Antelope, in size, between a stag and a roe-buck. The body, colour, and hair, resemble that of the stag, but he is deeper fided. The neck, throughout the whole length, is covered with shaggy hair underneath, which hangs down almost to the knees; and above is a bristly mane of a darker colour than the rest of the body. The knees also are covered with long thick hair, turning backwards; and the hoofs fall off every year. The horns are black, and like those of a goat, but the ears are shorter. The eyes and tail resemble those of a stag. It is a subtle, wanton animal, delighting in craggy rocks, and high places.

#### THE CHEVROTIN.

Some writers have named this remarkable Antelope, the little Guinea Deer; others call it the Royal Antelope. It is the least of all cloven-footed quadrupeds, and, perhaps, the most beautiful. Its legs, at the smallest part, are not much thicker than a goose quill; when mounted with silver, they make very curious tobacco-stoppers. This beautiful Gazelle is seven inches high, and about twelve from the point of the nose to the insertion of the tail. It is the most delicately shaped animal in the world, being completely formed like a stag in miniature; except that its horns, when it has any, are more of the Gazelle kind, being hollow, and annulated in the same manner. It has two canine teeth in the upper jaw, in which respect it differs from all other animals of the goat or deer kind, and thus makes a distinct species entirely by itself. This wonderful animal's colour is not less pleasing: the hair, which is short, and glossy, being, in some, of a beautiful yellow, except on the neck and belly, which is white. They are natives of India, Guinea, and the warm climates between the tropics; where they are found in great abundance. But though they are amazingly swift for their size, yet the negroes often overtake them in the pursuit, and knock them down with their sticks. They may be easily tamed, and then they become familiar and pleasing; but they are of such delicate constitutions, that they can bear no climate but the hottest; and they always perish with the rigours of ours, when they are imported. The male in Guinea has horns, the female is without any; as are all the kinds of this Gazelle, to be found either in Java, or Ceylon, where they chiefly abound.

#### THE PAZAN OR BEZOAR ANTELOPE.

In its general figure, this Antelope resembles the Algazel, except a small variation in its horns, and in having several qualities, and dispositions, peculiar to itself. The Algazel feeds upon the plains, but the Pazan is found only in the mountains: however, they are both inhabitants of the same countries and climate; being found in Egypt, Arabia, and Persia. The Bezoar Antelope is covered with short greyish hair, with a reddish cast: he is of the size of a common goat, and bearded in the same manner. The female has scarce any horns; but those of the male are very long, and marked with rings, whose number discovers his age. The body is in shape like a stag, and he is altogether as active and nimble: but he is very timid, and therefore seldom or never descends into the plains.

This is a species of the Gazelle kind famous for that concretion in the stomach, called the oriental bezoar, which was once in high repute all over the world for its medicinal virtues. The word bezoar is supposed to be derived either from pazan, or pazar, the name of the

animal that produces it, or from a word in the Arabic language, which signifies antidote or counter-poison. And here we beg leave to give it as our opinion, that the name algazel imports the gazel, in like manner as the word, which has been translated alcoran, means, the coran; al, in the Arabian language, answering to our article the, and having the same signification. The Bezoar is a stone found in the intestines of some animal, and brought over to us from the East Indies. But these kind of concretions are sometimes found in cows, and are occasioned by their practice of licking off their hair, which, in the stomach, gathers in the shape of a ball. Indeed, there is scarce an animal, except of the carnivorous kinds, that does not produce some of these concretions in the stomach, intestines, kidneys, bladder, and even in the heart. Like all others, the bezoar is found to have a nucleus, or hard substance within, upon which the external coatings were formed; for, upon being sawed through, it is seen to have layer over layer, as in an onion. This nucleus is of various kinds; sometimes the buds of a shrub, sometimes a piece of stone, and sometimes a marcasite. The stone is from the size of an acorn to that of a pigeon's egg; the larger the more valuable; its price increasing in proportion to its size, like that of a diamond. There was a time when a bezoar of four ounces sold in Europe for above two hundred pounds; but, at present, the price is greatly fallen, and they are in very little esteem. It is of various colours; sometimes of a blood colour, sometimes of a pale yellow, and of all the shades between these two. It is generally glossy, smooth, and has a fragrant smell, like that of ambergrease, arising probably from the aromatic vegetables upon which this Gazelle feeds. It has been given in vertiges, epilepsies, palpitations of the heart, colics, jaundice, and in those places where the dearness, and not the value of medicines, is consulted, in almost every disorder incident to man. In all, perhaps, it is equally efficacious, acting only as an absorbent, and possessing virtues not superior to common chalk, or the powder of crabs-eyes. Judicious physicians have therefore discarded it; and this celebrated medicine is now chiefly prescribed in countries, where the knowledge of nature has been but little advanced. When this medicine was in its highest reputation, many arts were used to adulterate it, and many countries endeavoured to find out a bezoar of their own; so that we had occidental bezoar from America, German bezoar, cow bezoar, &c. To these ignorance may impute virtues that they do not possess: experience has found but few cures wrought by their efficacies; but it is well known, that they often prove fatal to the animal that bears them; for, when become too large to pass, they block up the passage of the food, and the animal dies. The substance of these balls, however, is different from the bezoar mentioned above; being rather a concretion of hair than stone. There is a bezoar found in the gall bladder of a boar, and thence called hog bezoar, in very great repute; but, perhaps, with as little justice as any of the former; and it is more than probable, that the bezoar so much in use some years ago, was not the production of the pazan, or any one animal only, but that of the whole Gazelle tribe; who, feeding upon odoriferous plants, gave an admirable fragrance to the accidental concretions which they were found to produce; however, as this medicine is but little used at present, our curiosity is much abated, as to the cause of its formation.

We here close our catalogue of the Gazelles; all which nearly resemble the deer in form, and delicacy of shape (as will appear in the following chapter); but have permanent horns like those of the goat. They properly fill up, as we have already observed, the interval between those two kinds of animals; so that it is difficult to tell where the goat ends, and the deer may be said to begin. If we compare the gazelles with each other, we shall find but very slight distinctions between them: the turn, or the magnitude of the horns, the different spots in the skin, or a variation in size, are chiefly the marks by which their varieties are to be known; but their nature, way of living, and peculiar swiftness, all come under one description.



## C H A P. IV.

## The NATURAL HISTORY of QUADRUPEDS of the DEER Kind.

Containing a descriptive Account of the STAG; the FALLOW DEER; the ROE BUCK; the ELK, or MOOSE DEER; the REIN DEER; the VIRGINIAN; the SPOTTED AXIS; the GREAT AXIS; the PORCUPINE; the RIB-FACED; the TAILLESS; the MEXICAN; the GREY; the CARIBOU; the HIPPELAPHUS; &c.

THESE animals, like those of the goat kind, chew the cud; but they differ in this, that they shed their horns, which are internally solid, every year. If we consider their structure, and compare them with the goat, or the ox, we shall find, what will at first appear strange, that they more resemble the latter than the former. The ox and the stag, differ rather in their grossness and slenderness, rather than in any other anatomical distinction: the skeleton of either is nearly alike: the internal conformation is nearly the same; except, that the deer kind want the gall-bladder; their kidneys are also formed differently; and their spleen is proportionably larger. Such are the slight internal discriminations between two animals, one of which is among the swiftest, and the other among the heaviest of the brute creation.

The Stag is one of those innocent and peaceful animals, that seems made to embellish the park, and animate the solitudes of nature. The easy elegance of his form, the lightness of his motions, those large branches that seem made rather for the ornament of his head than his defence, the size, the strength of this beautiful creature, all sufficiently rank him among the first class of quadrupeds, and therefore naturally present him to us, as the first noted object of our curiosity and attention.

## NATURAL HISTORY of the STAG, or HART.

THIS animal, the first of the Deer kind, differs in size and horns from the fallow-deer. He is much larger; and his horns are round; whereas in the fallow-deer they are broad and palmated. The female of the Stag is called a Hind, and her young one a Calf. The first year the Hart has no horns, but only a hard excrescence, which is short, rough, and covered with a thin hairy skin: the second year, the horns are single and straight; the third, they have two antlers; the fourth, three; the fifth, four; and the sixth, five. The animal's age, however, cannot always be known, with certainty, by these indications, for sometimes they are more, and frequently less. When arrived at the sixth year, the antlers do not always increase, and though the number may amount to six or seven on each side, the Stag's age is then estimated rather from their magnitude, and the thickness of the branch which supports them, than from their variety or number. These horns, large as they appear, are shed annually, and new ones come in their place. The old horns are of a firm, solid texture; and handles of knives, and other domestic utensils, are usually made of them: but while young, nothing can be more soft and tender; and the animal, as if conscious of his imbecility, after having shed his horns, instantly retires from the rest of the herd, and, hiding himself in solitudes and thickets, never ventures out for pasture but by night. During this interval, which commonly happens in the beginning of spring, the new horns are very painful, and have a quick sensibility of any external impression. The flies also, at this time, are extremely troublesome to him, who, on that account, appears dejected and disconsolate. When the old horns fall off, the new ones do not immediately begin to appear; but the bones of the skull are seen covered only with a transparent periosteum, or skin, which, according to anatomists, covers the bones of all animals. After a short time, however, this skin begins to swell, and to form a soft tumour, containing

a considerable quantity of blood, which gradually is covered with a downy substance, apparently, soft as velvet, and is nearly of the same colour with the rest of the animal's hair. This tumour protudes daily from the point like the graft of a tree; and, rising, by degrees, from the head, shoots out the antlers on each side; so that in a few days, according to the condition of the animal, the whole herd is completed. For sometime, however, the horns are very soft, and covered with a sort of bark, which is merely a continuation of the integument of the skull. This bark is velvet, downy, and every where furnished with blood vessels, that supply the growing horns with nourishment. As they creep along the sides of the branches, their prints are marked over the whole surface; and the larger the blood vessels, the deeper those prints appear. Hence arise the inequalities on the surfaces of the horns of the Deer kind, which are furrowed all along the sides, the impressions diminishing towards the points, where the parts are as smooth and solid as ivory. But it is to be observed, that the substance, of which the horns are composed, begins to harden at the bottom, while the upper part remains soft, and continues to grow; from whence we may conclude, that the horns of the Deer grow differently from those of sheep or cows, which are invariably seen to increase from their bottoms. But when the whole herd has attained its full growth, the extremities begin to acquire their solidity; the velvet covering, or bark, together with the blood vessels, dry up, and then begin to fall; which process the animal itself hastens, by rubbing its antlers against every tree that it approaches; and, in this manner, the whole external surface being stripped off, the head at length acquires its complete expansion, solidity, and comeliness.

It is an observation worthy of notice, that if a Stag be castrated when his horns are shed, they will never grow again; and, on the contrary, if the same operation be performed, while the horns are in perfection, they will never fall off. The quantity of his provisions will also tend to facilitate the growth and expansion of his horns. It may be even possible to stop their growth intirely by a considerable retrenchment of food; and, as a confirmation of this assertion, nothing can be more obvious than the difference between a Stag bred in a fertile pasture, and undisturbed by the hunter, and one ill-fed, and liable to perpetual alarms. The head of the former is expanded, his antlers are numerous, and the branches thick; whereas the latter has but few ramifications, the traces of the blood vessels are but slight, and their spread is inconsiderable. The beauty and size of their horns, therefore, mark the strength and vigour of the animals; for such of them as are sickly, or have been wounded, never shoot out that magnificent profusion so much admired in the Stag. Thus the horns may be resembled to a vegetable substance grafted on the head of this animal. Like a vegetable they grow from the extremities; like a vegetable they are for a while covered with a bark that nourishes them; like a vegetable they have their annual production and decay.

A short time after these animals are furnished with new horns, they begin to feel the natural impulse of propagating their species. The old ones are most forward; and, about the end of August, they leave the thickets, and return to the plains, in order to seek the Hinds, to whom they call with a loud tremulous note. At this time their necks become turgid; they appear



bold and furious; fly from one place to another, strike with their horns against the trees, and every other opposing object; and continue restless and fierce till they have found the females, who at first avoid them, but, at last, are overtaken and compelled. When two Stags are competitors for the same Hind, how timid soever they may appear at other times, they now seem agitated with an unusual degree of ardour: they paw up the earth, menace each other with their horns, bellow loud, and desperately engage, seemingly determined either to conquer or die. Such a combat continues usually till one of the parties is either worsted, or put to flight; and it often happens that the victor is obliged to fight several such battles before he remains the undisputed master of the field. On these occasions, the old ones are generally the most successful, as they possess a much greater degree of strength and courage: and these also are by the Hinds preferred to the younger ones, the latter being more feeble and less ardent. However, they are all equally inconstant, confining themselves to one female but a few days; and then seeking out another, who is, perhaps, not to be enjoyed without a repetition of former danger.

In this manner the Hart continues to range from mate to mate for about three weeks, during which period he scarcely either eats, sleeps, or rests. At the termination of this libidinous season, the Stag, which was before very fat, sleek, and glossy, becomes lean, feeble, and timid. Having fully gratified the instinct of nature, he retires from the herd, in order to seek food and repose, he frequents the verge of his bounds; and selects the most nourishing pastures, where he continues till his strength is renovated. Thus is his whole life spent in the alternatives of plenty and want, of corpulence and leanness, of health and sickness, without having his constitution materially affected by the violence of such transitions. As he is above five years coming to perfection, he lives above forty years; and it is a general rule, that every animal lives about seven or eight times the number of years which it continues to grow. What therefore is reported concerning the life of this animal, has arisen from the credulity of ignorance: some say, that a Stag had been taken in France, with a collar, on which was inscribed, "*Cæsar hoc me donavit*," the gift of Cæsar; which has been interpreted of Julius Cæsar; but it should be considered Cæsar is a general name for kings; and that one of the Emperors of Germany, who are always stiled Cæsars, might have ordered the inscription. However, it is certain, that the Stag may differ as to the term of his life; either in respect of the goodness of his pasture, or the repose he may be suffered to enjoy; for these circumstances not only influence his age, but also his strength and vigour. The Stags inhabiting the plains and vallies, which abound in corn and pasture, are much more corpulent, as well as tall, than such as are bred on rocky wastes, or heathy mountains. The latter are low, small, meagre, and incapable of running with the celerity of the former, though they are found to hold out much longer: they are also more artful in evading the hunters; and their horns are usually black and slender, while those of the low land Stags are reddish and flourishing; so that this animal seems to increase in beauty and stature, in proportion to the extent of his security, and the richness of his pasture.

In England, the colour of the Hart is generally red, or a reddish brown, with some black about the face, and a black list down the hinder part of the neck, and between the shoulders: nevertheless, in other countries, the greater number of these animals are brown: a few of them, indeed, are white; but such seem to have obtained this colour by a domestic tameness. The Stag has the most beautiful eye of any animal that is a native of this climate; and his senses of smelling and hearing are in no less perfection. When in the least alarmed, he lifts his head, erects his ears, and stands for a few moments in a listening posture. Whenever he ventures on some unknown ground, or quits his native covert, he makes a pause at the skirt of the plain, in order to examine every object around him; after which he turns

his face against the wind, for the purpose of discovering by his scent the approach of any enemy. Should a person at some distance whistle, or call aloud, the Stag stops short immediately in his slow measured pace, and gazes on the intruder with a kind of awkward admiration; and if he perceives neither dogs, nor any instruments of destruction levelled against him, he then proceeds forward without betraying the smallest emotions of fear. Man, indeed, is not the enemy he is most afraid of; on the contrary, the sound of the shepherd's pipe seems to inspire him with a pleasing delight, and the hunters sometimes make use of that instrument to allure the poor animal to his destruction. The Stag eats slowly, and is very delicate in the choice of his pasture; and, having eaten a sufficiency, he retires to the covert of some thicket to chew the cud in security. But he seems to perform the act of rumination with much greater difficulty, than either the cow or sheep; for the grass is not returned from the first stomach without much straining; and a kind of hiccup, which is easily perceived during the whole time it continues. This defect may probably proceed from the greater length of the neck, and the narrowness of the passage; all those of the cow and sheep kind having it much wider. This animal's voice is stronger, louder, and more tremulous, in proportion as he advances in age; in rutting time it is ever terrible: at this season, he seems so transported with passion, that nothing obstructs his fury; and, when at bay, he keeps the dogs off with great intrepidity. Some years ago, William duke of Cumberland, caused a tiger and a stag to be inclosed in the same area; and the stag made so bold a defence, that the tiger was compelled to fly. The Stag seldom drinks in the winter and still less in the spring, while the plants are tender and covered with dew. It is in the heat of summer, and during the time of rut, that he is seen constantly frequenting the sides of rivers and lakes, as well to slake his thirst, as to cool his raging ardour. He swims with great ease and strength, and best at those times when he is fattest, his fat keeping him buoyant, like oil upon the surface of the water. When in pursuit of the Hinds, he will even venture out to sea, and swim from one island to another, although some miles asunder.

The cry of the Hind is not so loud as that of the male, and is never excited, but by apprehension for herself or young. It need scarce be mentioned, that she has no horns, or, that she is more feeble, or unfit for hunting, than the male. When once they have conceived, they separate from the males, and both herd apart. The time of gestation continues between eight and nine months, and one only at a time is generally produced. May, or the beginning of June, is their usual season for bringing forth the Calves; during which time they take great care to hide them in the most secure retreats. Nor is this a needless precaution, since almost every creature is then a formidable enemy: the eagle, the falcon, the osprey, the wolf, the dog, and all the rapacious animals of the cat kind, are at this time in continual motion to find out their retreats: but, what appears extremely unnatural, the Stag himself is also their professed enemy; and the Hind is obliged to employ all her arts to conceal her young from him, and from the most dangerous of their assailants. At this season, therefore, the courage of the male seems to be transferred to the female; for she defends her young against her less formidable opponents by force; and, when pursued by the hunter, she even offers herself to mislead him from the principal object of her concern; with this view, she will fly before the hounds, in a direct course with an amazing fleetness; and if she is so fortunate to escape with her life, she returns to her young, after having eluded her pursuers. The Calf never quits the Hind during the whole summer; but in winter she, with all the males under a year old, assemble together in herds, which are more numerous in proportion as the season is more or less severe. In the spring they separate; the hinds to bring forth; when none but those of one year old remain associated; these animals, however, in general, are fond of herding and grazing in company; danger or necessity alone separates them.

But



But the dangers they have to fear from other enemies, are nothing when compared to those from the human species; for men of every age and nation have made the chase of the Stag one of their most favourite pursuits; and those who first hunted from necessity, have continued the same for amusement. In our own country, in particular, hunting has ever been esteemed one of the principal diversions of the great; and, in former times, beasts of the chase had the whole island for their range; they knew no particular master, nor any other limits than those of the ocean. The jurisprudence of the Roman empire, which was accommodated to the manners of the first ages, established it as a law, that as the natural right of such things as have no owner belongs to the first possessor, wild beasts, birds, and fishes, are the property of those individuals who can first take them: but the northern barbarians, who overran the Roman Empire, bringing with them a strong relish for this diversion, and being now possessed of more easy means of subsistence, from the lands they had conquered, their chiefs and leaders began to appropriate the right of hunting, and made it a privilege of royalty; and when the Saxon kings had established an heptarchy, the chaces were reserved by each sovereign for his own particular amusement. In those uncivilized ages, war and hunting were the principal employment of the nobles; nevertheless, as the Saxon kings appropriated only those lands to the business of the chase that were unoccupied before, no individuals received the least restraint, nor injury. But it was otherwise when the Norman kings were settled upon the throne: the passion for hunting was then carried to excess, and every civil right was involved in universal ruin: the village communities, nay, even the most sacred edifices, were all turned into one vast waste, to make room for animals, the objects of a lawless tyrant's pleasure: sanguinary laws were made for the preservation of the game; and in the reigns of William Rufus, and Henry I. it was less criminal to destroy one of the human species, than a beast of the chase. But at the restoration of the Saxon line, under Henry II. the rigour of the forest laws were softened; and when property became more equally divided, by the introduction of the arts and industry, extensive hunting grounds became more limited: tillage and husbandry likewise combined, and compelled the beasts of the chase, to give place to others of the domestic kind, more useful to the community; so that in proportion as the useful arts gained ground, they encouraged the labours of the industrious, and repressed the licentiousness of the sportsman.

Hence it is, that, in the present cultivated state of this country, Stags are almost unknown in a wild state of nature; those of them that remain among us are kept under the name of Red Deer, in parks, with the Fallow Deer; but, even these are much less numerous than formerly, owing partly to their excessive viciousness, and the coarseness of their flesh, which have contributed in a great measure to their extermination: however, a few are to be found in their wild state on the moors which border on Cornwall and Devonshire; in the Highlands of Scotland; and on the mountains of Kerry in Ireland, where they add magnificence to the romantic scenery of the celebrated lake of Killarney.

The hunting of the Stag and Buck in England, are performed in a similar manner; the animal being driven from some park, and then pursued through the open country: but those who pursue the wild animal, have a much higher object and greater variety in the chase: besides, the superior strength and swiftness of the mountainous stag, prolongs the amusement: it is possessed of more various arts to escape the hunter, and leads him to precipices, where the danger ennobles the chase. Having spent his whole life in a state of continual apprehension; having frequently been followed, and as frequently escaped, he knows every trick to mislead, to confound, and intimidate his pursuers; to stimulate their ardour, and enhance their success. But here it is impossible for the most lively powers of description to give an adequate idea of the nature of the chase, and the pleasures attending it; and those who are fond of

hunting the Stag, to see, or enjoy it in perfection, should repair to Ireland; where, in that fertile, romantic, and enchanting country, all ranks and degrees of both sexes, on St. Patrick's day, and for several days after Christmas-time, are chiefly devoted to the diversion of the chase; when the hunter is rewarded for his toil, and his industry is fully repaid. In England, however, the chase is continued in those parts of the country where the Red Deers are still preserved; and, where the animal is perfectly wild, the amusement, as already observed, is superior. The ambition of the hunter, when he leads out his hounds to the mountain side, is to unhair the largest and boldest Stag of the whole herd; and for this purpose he examines the track, which, if he finds long and large, he concludes that it must have belonged to a Stag, and not a Hind, the print of whose foot is rounder. Those marks also which he leaves on trees, by the rubbing of his horns, shew his size, and point him out as the proper object of pursuit. In tracing a Stag to his haunt, it is to be observed, that he changes his manner of feeding every month. In November the Harts feed on heaths and broomy places: but in December they herd together, and withdraw into the recesses of the forests, feeding on holm, elder-trees, and brambles. The three following months they no longer herd together, but separate into companies of four or five each, and venture out to the corners of the forest, where they feed on winter pasture, but sometimes make incursions into the adjacent corn-fields, to feed upon the tender shoots just on their appearance above ground. In the months of April and May they resort to thickets, and other shady places, seldom venturing forth unless roused by approaching danger. In September and October, upon the return of their annual ardour, they rush from their shady retirements, boldly facing every danger, without any certainty of food or shelter. When, from a knowledge of the above circumstances, the hunter has found out the residence and quality of his game, his business then is to uncouple, and cast off the hounds for the pursuit; who no sooner perceive the timid animal flying before them, than they open altogether in full cry, pursuing rather by the scent than the view, at the same time encouraging each other to continue the chase, and tracing the flying Deer with the most amazing sagacity. The hunters also are not less ardent in their speed on horseback, cheering up the dogs, and directing them where to pursue. On the other hand, the Stag, when unhair, seems to fly with the swiftness of the wind, leaving his pursuers far behind; till at length, having gained his former coverts, and no longer hearing the cries either of the hounds or hunters, he stops, gazes around him, and seems to recover his natural tranquillity. But this calm proves only a momentary breathing; for his subtle pursuers continue to trace him; and he again is alarmed with approaching danger. Again he renews his efforts to escape, and again leaves his enemies at their former distance; but this second attempt to fly from destruction rendering him more feeble than before, when they come up, he is unable to out-run them; he tracks more heavily on the ground, which, while it increases the strength of the scent, it redoubles the cries of the hounds, enforcing their speed, and inflaming their ardour in the pursuit: the poor animal is therefore obliged now to practice all his little arts of evasion, which sometimes, though but seldom avail him. He takes refuge, when hard pressed, among the herd, and lies close himself, that the hounds may overshoot him. Sometimes he will send forth a young hart in his stead: at others, he will break into one thicket after another, in search of deer, rousing them, collecting them together, and endeavouring to put them upon the tracks he has made. His old associates, however, with a true spirit of ingratitude now shun him, and leave the wretched animal to his fate; who, thus abandoned, tries other stratagems to secure his personal safety. He doubles and crosses such places, as are least liable to retain the scent: he runs against the wind, not only to cool himself, but that he may the better hear the voice, and judge of the distance of the hounds. It is now very apparent, how sorely the unhappy creature is pressed,



pressed, by his manner of running, which, from a bounding easy pace, is converted into a stiff, short amble: his mouth is black and dry, without foam on it: his tongue hangs out; and, if we may credit common report, the big round tear is ready to start from his eye. At last, when every other method has proved ineffectual, his only refuge is to take to the water, and to attempt an escape by crossing whatever lake or river he happens to approach; and, while swimming, he keeps in the middle of the stream, lest, by touching a bough of a tree, or the herbage on the banks, he may give scent to the hounds; nor does he ever swim against the stream; whence huntsmen have made it into a kind of a proverb, namely, "that he who would his chace find, must up with the river, and down with the wind." In this emergency too, he will cover himself under the surface of the water, shewing only his antlers, and the tip of his nose. Every art, and every resource being exhausted, the poor creature at last collects the feeble remains of his strength, in order to oppose boldly those persevering enemies, from whom he has endeavoured in vain to escape: he therefore now faces dogs and men, and, for some time, stands resolutely at bay. In this situation, being quite desperate, he guards himself, on every side, with his horns: he threatens furiously his opponents: he aims at the first dog or man that approaches; and it often happens, that he does not die unrevenged. At the commencement of the contest, however, the more wary hounds seem inclined to avoid him; but, the whole pack quickly coming up, he is soon surrounded and brought down, upon which those who are fortunately in at the death halloo, and the huntsman winds a treble mort, as it is called, with his horn. Such is the manner of pursuing the stag in England; but every country has a peculiar method of its own, adapted either to the nature of the climate, the face of the soil, or the genius of the people. The ancient manner was very different from that practiced at present: they used their dogs only to find out the game, but not to rouse it. Hence they were not curious as to the music of their hounds, or the composition of their packs: and that dog who opened before he had discovered his game, was held in no estimation. They usually endeavoured to find out silently the animal's retreat, which, when discovered, they surrounded with nets and engines, and then, with their united cries, roused and forced him into the toils previously prepared for him. We shall conclude this part of our subject with mentioning a few of the many terms in use among game-keepers and hunters, when they speak of the stag. In the first year, he is called a calf, or hind calf; in his second, a knobber; in his third, a brock; in his fourth, a staggar; in his fifth, a stag; and in his sixth, a hart. The female, in her first year, is called a calf; in her second, a hearse; and in her third a hind. In the place where the stag resides, he is said to harbour; when he cries, he is said to bell; the print of his hoof is called the slot; his tail, the single; and the excrement, his fewmet: his horns are called his head. The antlers also have distinct names: the first that branches off is called, the antler; the second the sur-antler; all the rest which grow afterwards to the top, which is the crown, are called royal antlers. When a deer has passed into a thicket, leaving marks whereby his bulk may be guessed, it is called, an entry. When they cast their heads, they are said to mew. When a stag, hard hunted, takes to the water, he is said to go fail. When he turns his head against the hounds, he is said to bay; and when the hounds pursue upon the scent, until they have unharboured the stag, they are said to draw on the slot. Most of these terms are now laid aside, or in use only among game-keepers.

In this country, we have few varieties of the red deer, and they are mostly found of the same size and colour: but it is otherwise in different parts of the world, where they are seen to differ in form, in size, in colour, and in their horns. On the mountains of New Spain are stags extremely swift, and yet they are no bigger than fawns. They are shaped much like European stags, but their horns are as black as pitch, and

round, as if turned in a lathe, ending in a crooked point: they increase every year, with a new spiral turn at the end, which shews the age. Their eyes are lively, their ears long, their teeth large, and their tails are furnished with long hair, while that on the other parts of the body is short, and of a bright chestnut colour. They are often kept tame, and the hinds bring forth their young where they are housed. In the day-time they are let out into the woods to feed, and at night they return to their places of abode. There is a beautiful kind of Stag in Sardinia, about two feet, eight inches high to the top of the back. The neck is about a foot long, and the hind leg, from the knee to the bottom of the foot, is two feet. The hair is of four colours, namely, fallow, white, black, and grey: the white is predominant under the belly, and on the inside of the thighs and legs. Along the back are two rows of spots in a right line: but those on other parts of the body are very irregular. A white line runs along each side, and the neck and head are grey. The tail is black above, and white underneath, and the hair upon it is six inches long. This, by Pliny, is named the Spotted Axis Deer.

In China, the Stags are of a particular kind, being no taller than a common house-dog, and hunting them is a common diversion of the great. Their flesh, while young, is exceeding good; but when they arrive at maturity, it begins to grow hard and tough: however, the tongue, the muzzle, and the ears, are in particular esteem among that luxurious people. Their manner of taking them is very singular: they carry the heads of some of the females stuffed, and imitate exactly their cry: the male, perceiving the heads, does not fail to appear; and, upon their nearer approach, the whole company, who are concealed, rise, surround, and frequently take him alive.

The stags of Corsica are very small, being not above half the size of those common in this country. They are short and thick; their legs are short, and the hair of a brown colour. Those of Mexico have tails as long as mules, are of the same size, and have surprizing strength; two of them, when tamed, were able to draw a carriage. The stags of Canada differ from ours in nothing, except the size of the horns, which is greater; and the direction of the antlers, which rather project forward than turn backward. The Stag of North America is also very large. Their horns are covered over with a very hard hairy skin, of the same colour as that of the body. This skin has a great many veins and arteries full of blood, with which the vessels seem to be swelled, especially on the inside, where there are furrows to receive them. We are informed, that the Americans have brought their stags into the same state of domestic tameness that we have our sheep, and black cattle. They send them forth in the day-time to feed in the forests, and at night they return home with the herdsman who guards them. The inhabitants have no other milk but what the hind produces, and use no other cheese but what is made from thence. Thus we see, that an animal which seems made only for man's amusement, may be easily brought to supply his necessities.

The horns of the Stag are greatly in use, and commonly known by the name of hartshorn. It is calcined for some uses, and made into a jelly for others. Calcined hartshorn is a sort of lime deprived of all its active principles, and is used as an absorbent to destroy acids in the stomach, and to abate the acrimony of the humours, when the body is in a laxative state. The jelly is very nourishing, a good restorative, and some prescribe it against vomiting and spitting of blood. From hartshorn is extracted a water, spirit, salt, and oil, by distillation. Some use the water as a vehicle for remedies that are given in malignant fevers. The spirit and salt are both recommended in the small pox, the apoplexy, epilepsy, palsy, and in hysteric disorders. The oil is by some applied to the nostrils of women in hysteric fits, and as a liniment for paralytic limbs. The marrow of the stag is preferred to that of any other animal to ease pain, and to supple callous parts.



## NATURAL HISTORY of the FALLOW DEER.

**T**HE Buck and Doe, called Fallow Deer, are animals very well known in England, where they are found in the greatest perfection; the young of which are called Fawns. They are generally found in parks, and their flesh, called venison, is much better eating than that of a stag or hind. The Fallow Deer and stag resemble each other in several particulars: they are alike in form, alike in disposition, in the superb furniture of their heads, in their swiftness, and in their timidity; and yet no two species of animals avoid each other with a stronger antipathy: they never engender together, nor herd in the same place: they form distinct families, which, though seemingly near, are very remote. The Fallow Deer are smaller, less robust, less savage, and more easily tamed than those of the stag kind: they feed upon many articles which the latter will refuse, on which account the venison is better preserved. The buck browses closer than the stag, and is therefore very prejudicial among young trees, which he often strips too close for recovery. He seeks the female at the second year, and, like the stag, is fond of variety. In three years he comes to perfection, and lives sixteen; but the stag is seven years before he comes to maturity, and will live forty years. The horns of the buck are palmed at their ends, pointing a little forward, and branched on the hinder side, having two sharp brow antlers, and above them two small slender branches. His head, as that of all other animals of this kind, is shed annually, and takes the usual time for a renewal; but this change happens later than in the stag; and, at a certain season, the former animal is not so furious as the latter; nor does the buck so much exhaust himself by the violence of his ardour. He does not quit his natural pastures in quest of the fawn, nor attack other animals with indiscriminate ferocity; but, among Fallow Deer, the males will furiously combat for the female, and it is not without many fierce battles, that one buck is seen to become master of the whole herd; nor is it unusual for a herd to divide into two parties with great obstinacy, both of whom seem desirous of gaining some favourite spot of the park for pasture, and of driving the vanquished party into the coarser and more disagreeable parts. Each of these factions has its particular chief, namely, the two oldest and strongest of the herd. These lead on to an engagement, and the rest follow under their direction. Their combats are singular enough; they attack with order; support the assault with courage; pour in fresh supplies where wanted; retire, rally, and never give up the field upon a single defeat; for the engagement is renewed for several days together; until, at length, the most feeble side is obliged to give way, and to be confined to the less agreeable part of the park, where only they can find safety and protection. The colour of the buck is various, reddish, deep brown, white, and spotted, and its tail is longer than that of the stag. The doe goes about eight months with young, and, in general, brings forth but one at a time. The buck being a beast of chase, like the stag, the hunters have invented a variety of names for him. The first year he is termed a fawn; the second, a pricket; the third a forel; the fourth, a fore; the fifth, a buck of the first head; and the sixth, a great buck: the female is called a doe, the first year a fawn, and the second a tegg.

The manner of hunting the buck is pretty much the same as that of stag hunting, except that less skill is required in the former. The buck is more easily roused; it is sufficient to judge by the view, and mark what grove or covert he enters, as he is not known to wander far from thence, nor, like the stag, to change his layer, or place of repose. When hard hunted, he takes to some strong hold, or covert, with which he is acquainted; not, like the stag, flying far before the hounds, nor using any of the subtleties, which this animal is accustomed to. He will take the water when sorely pressed, but seldom a great river; nor can he swim so long as the former. In short, the strength, the cunning, and the courage of this animal, are inferior to those of the

stag, and consequently he affords neither so long, so various, nor so obstinate a chase.

In England we have two varieties of Fallow Deer, which are said to be of foreign origin: the beautiful spotted kind, supposed to have been brought from Bengal; and the very deep brown sort, which are now so common in many parts of this kingdom: they were introduced here by James I. from Norway, where he passed some time when he visited his intended bride, Mary of Denmark: the king observed their hardiness, and that they could endure the winter without fodder, even in that severe climate; he therefore brought some into Scotland, and from thence transported them into his chaces of Enfield and Epping, to be near his palace of Theobald's; for that monarch, it is well known, was fond to excess of hunting. Since that time they have greatly multiplied in many parts of this island, and England is now become more famous for its venison than any other country in the world. The flesh of the French Fallow-Deer is much inferior, both in fatness and flavour to that fed on our pasture. Those of Spain have a slenderer neck; are as large as stags, but of a darker colour. According to Labat, in Guiana, a country of South America, there are deer without horns, much less than those of Europe, but resembling them in every other particular. When pursued, they fly into places where no other animal can follow them. The negroes stand to watch for them in narrow paths, which lead to the brook, or the meadow, where they feed. When within reach, they shoot, and are happy if they bring down their game; for the flesh of these kind of deer, though seldom fat, is considered by them as a great delicacy. They are called in that country Cariocon.

## NATURAL HISTORY of the ROE-BUCK.

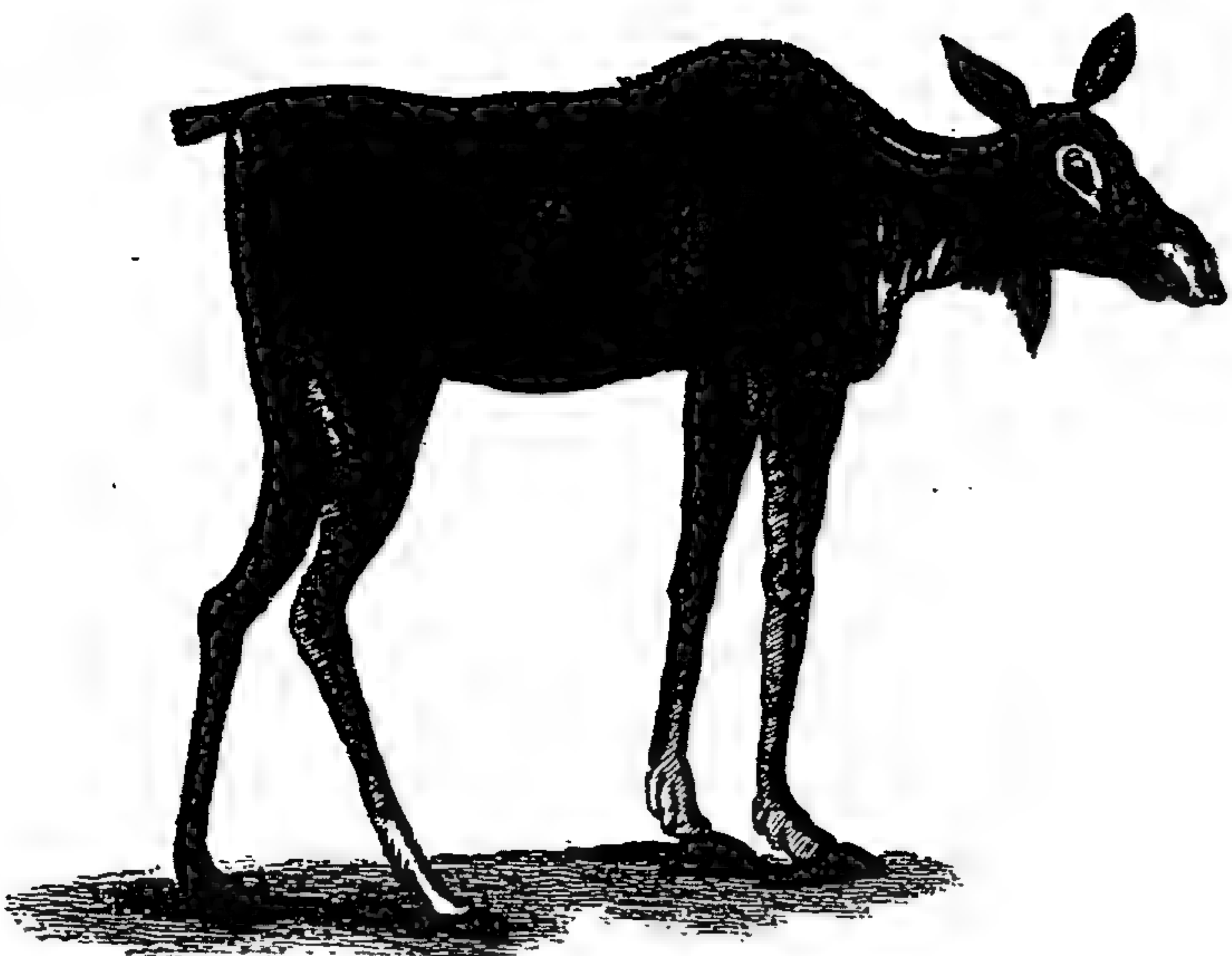
**T**HIS animal is found in most parts of Europe, as far north as Norway. It inhabits Tartary and China, in Asia. It was formerly in the north of England, and in Wales; but, at present, the species no longer exists in any part of Great-Britain, except in the Highlands of Scotland. This is one of the least of the deer kind, being only three feet four inches long, and two feet four inches high. The horns, which are about eight inches long, are upright, round, and divided into only three branches. The body is covered with very long hair, well adapted to the rigour of its mountainous abode. The lower part of the hair is ash-colour, always clean, smooth, and glossy. Near the ends is a narrow bar of black, and the points are yellow. The ears are long, their insides of a pale yellow, and covered with long hair. The spaces bordering on the eyes and mouth are black. The chest, belly, and legs, and the inside of the thighs, are of a yellowish white: the rump is of a pure white, and the tail very short. The make of this animal is very elegant; and its swiftness equals its beauty. It differs from the stag in its smaller size, and the proportionable paucity of its antlers; and it differs from all of the goat kind, as it annually obtains a new head, which none of that kind are ever seen to do.

Though but a very small animal, yet, when its young is attacked, it will face even the stag, and often comes off victorious. It is also possessed of more cunning, is more difficult to pursue, and, notwithstanding its scent is much stronger, it is more frequently found to make a good retreat. It is also different from the stag in its natural appetites, inclinations, and whole habits of living. Instead of herding, the sire, the dam, and the young ones, associate together in separate families, and never admit a stranger into their little community. The Roe-Buck and his mate, after the first fawning, conceive so strong an attachment to each other, that they never after separate. The female goes with young but five months and a half, which alone serves to distinguish this animal from all others of the deer kind, that continue pregnant more than eight. The Roe-Buck is every year becoming scarcer, and the whole race in many countries is wholly worn out: even in France, where it



# QUADRUPEDS

THE ELK



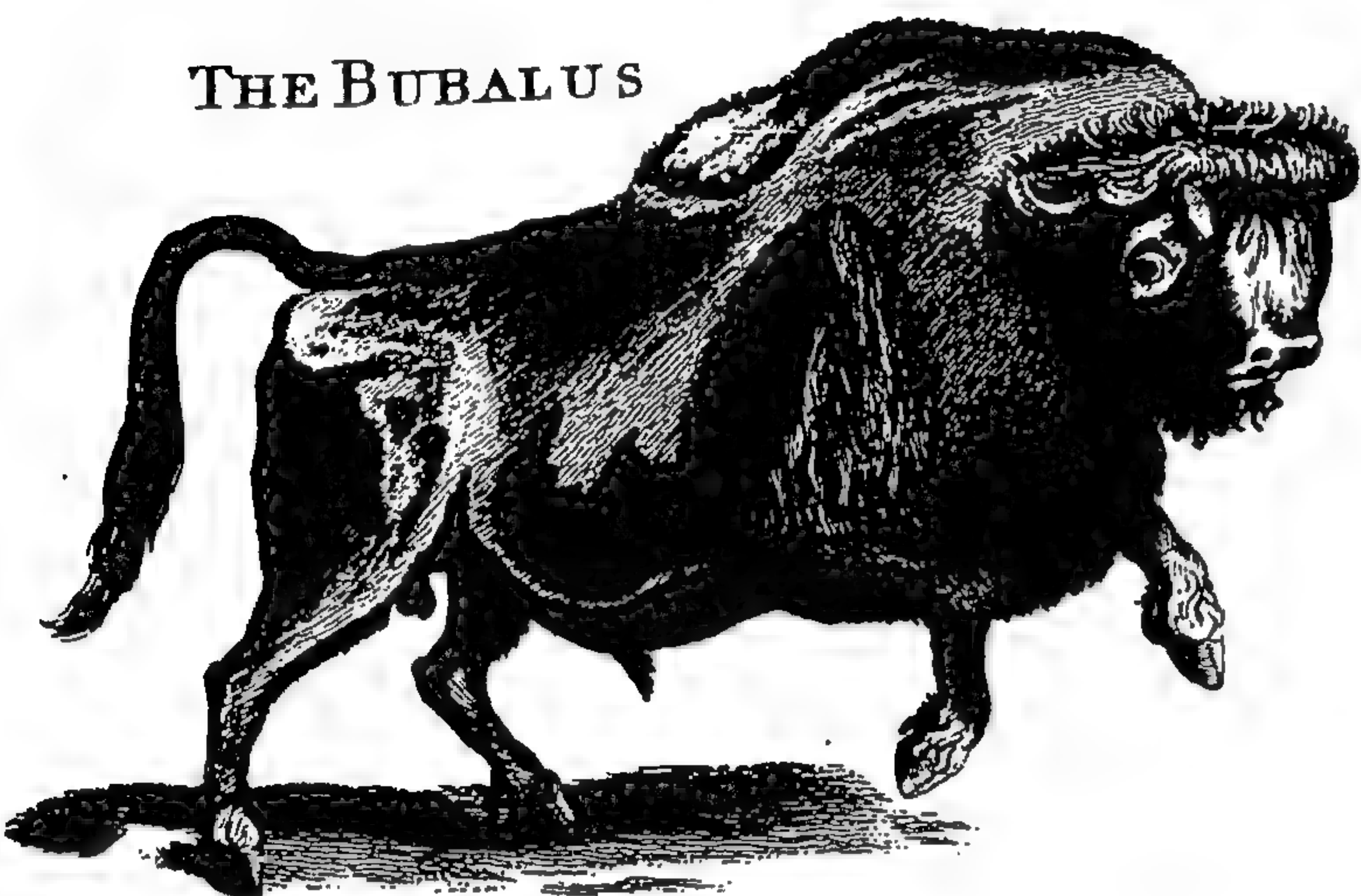
THE FOURMILLIER



THE FIBER



THE BUBALUS



THE GUINEA PIG



THE GLUTTON



THE GRISON



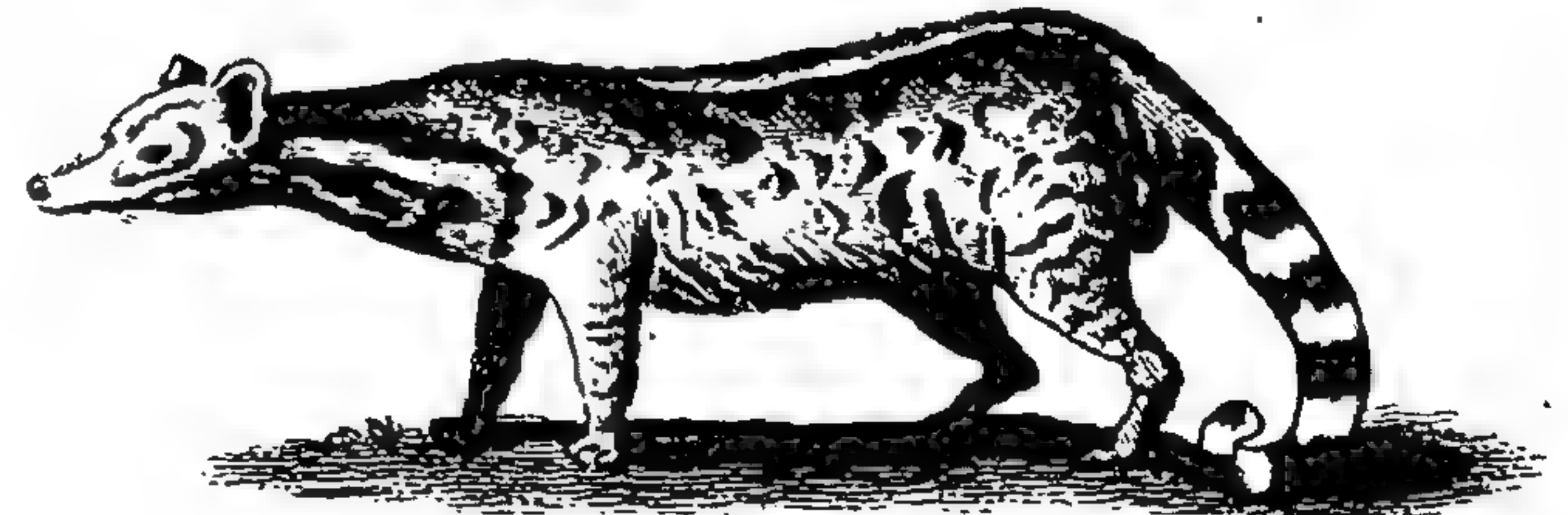
THE HEDGEHOG



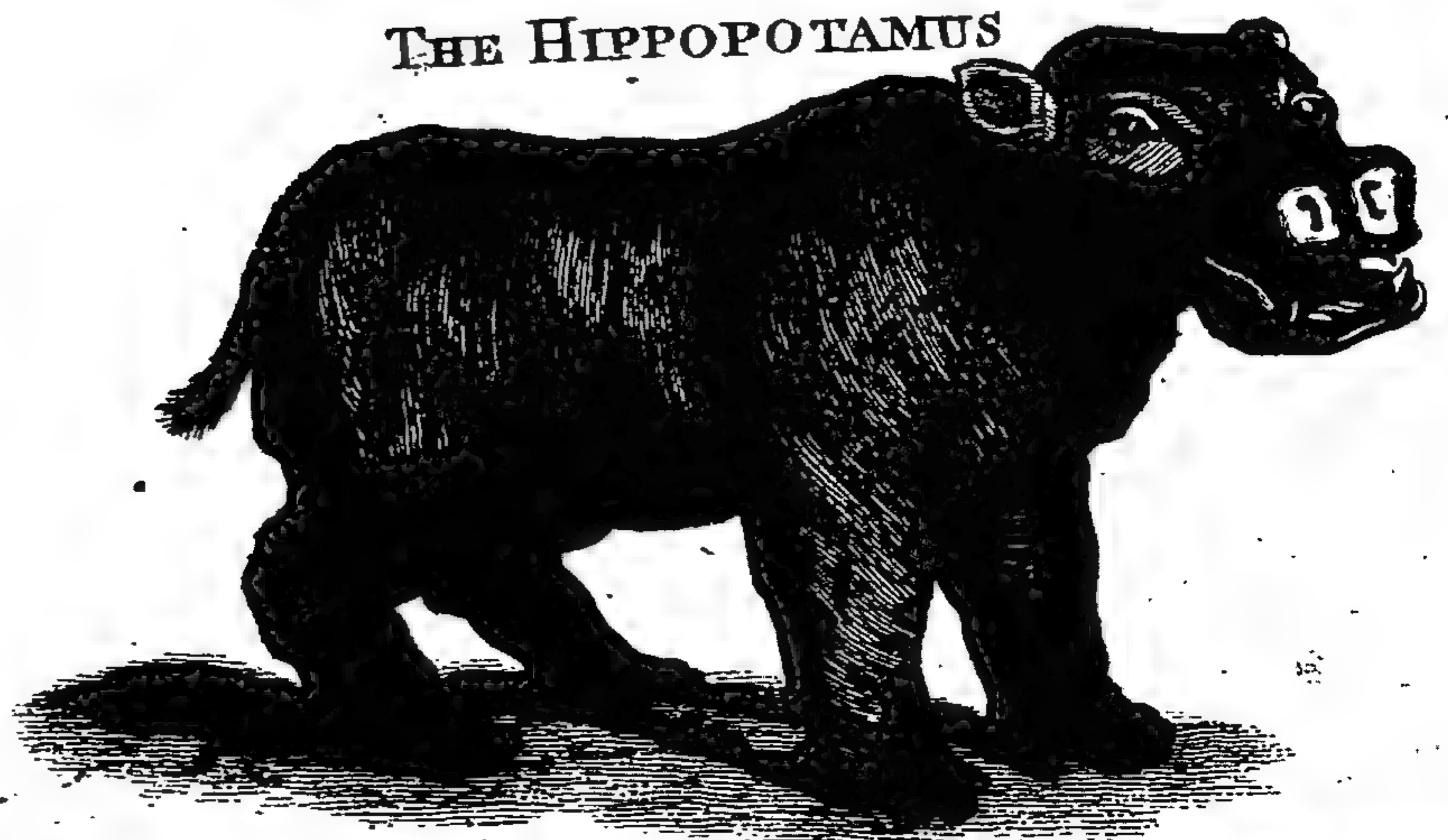
THE GAZELLE



THE CIVET



THE HIPPOPOTAMUS





once extremely common, it is now confined to a few provinces; and it is probable, in an age or two, the whole race will be utterly extirpated in Europe. As the growth of the Roe-Buck, and its arrival at maturity, is much speedier than that of the stag, so its life is proportionably shorter. It is seldom found to extend above twelve or fifteen years, and, if kept tame, it does not live above six or seven. The cry of the Roe-Buck is neither so loud nor so frequent as that of the stag. The young ones have a particular manner of calling to the dam, which the hunters imitate, and by this artifice allure the fawns to their destruction.

Fallow-Deer delight chiefly in hilly grounds, preferring the tender branches of trees and their buds to corn, or other vegetables; and it is universally allowed, that the flesh of those between one and two years old, is the greatest delicacy that is known: perhaps, the scarceness of it enhances its flavour. In summer they keep close under covert of the forest, seldom venturing out, except, in violent heats, to a river or fountain; at other times, and indeed, in general, they are contented to flake their thirst with the dew that falls, and seldom risque their safety to gratify their appetites. They may be subdued easily, but can never be thoroughly tamed. No arts can attach them to the feeder; and, while under his management, they still preserve a part of their natural wildness, and are subject to terrors without a cause. In attempting to escape, they strike themselves with such force against their inclosure, that they will break their limbs, and become utterly disabled: in short, whatever care is taken to tame them, they are never to be relied on entirely; for they have capricious fits of fierceness, and sometimes butt at those they dislike with a degree of force not a little dangerous.

These animals are much more common in America than in Europe. With us there are but two known varieties, the red, which is the larger sort, and the brown, with a spot behind, which is less: but, in the new continent, the breed is extremely numerous, and the varieties in equal proportion. In Louisiana, they have the same hair, and are of the same colour as the common sort, but they seem to partake of the nature of a stag and a buck. They are four feet high: their horns are large, having several branches, and bend forward: their flesh is dry, but has the taste of mutton, when well fattened. They are found among the woods, and upon the hills, for they seldom or never visit the open country. When the natives hunt these animals, they put on the dried head, with part of the neck, by which deception, and by counterfeiting their cry, they can get pretty near, and shoot them.

#### NATURAL HISTORY of the E L K.

**I**N size, this animal exceeds any one of the deer kind already described; for it grows above the height of a man, and has the bulk of a horse. The colour of the hair is greyish, not unlike that of an ass. The ears are long and broad. The hair is coarse like that of a horse; but it is finer next the skin, for which reason it lies very flat and smooth. The horns are not branched, like those of the stag, but have a short trunk at the beginning, and then immediately grow broad, with teeth on one of the edges: the muzzle is very long; and the upper lip hangs so much over the nether, that, when grazing, he is obliged to go backward. In 1742 a female was exhibited at Paris, that had been caught in the forest of red Russia. Though then young, it was six feet seven inches high. From the tip of the nose to the insertion of the tail it was ten feet; and the circumference of the body was eight feet. The hair, which was long and coarse, resembled that of the boar: the ears were eighteen inches long, and not unlike those of the mule: under the throat, she had a beard like that of the goat: in the middle of the forehead, between the horns, projected a bone as large as an egg; and she made use of her fore-feet as a defence from the assaults of her enemies.

These animals delight in cold countries, and in  
No. 5.

shady moist places. They shed their horns every year in February and March, and in August the new ones arrive to perfection. In Europe, they inhabit Lapland, Norway, and Russia; in Asia, the north-east parts of Tartary and Siberia: but they inhabit only those parts of the above countries, where cold reigns with the utmost rigour during part of the year. When the whole country is deeply covered with snow, the Elks herd together under the tall pine trees, strip off the bark, and continue in that part of the forest, while it affords them subsistence. While passing through thick woods, they carry their heads horizontally, that their horns may not be entangled in the branches. Though, in general, very inoffensive, yet at one time of the year, or if wounded, they become very furious, and attack with both horns and hoofs. They have a singular gait, their pace being a high shambling trot; but they move swiftly: they were formerly used in Sweden to draw sledges; but as they were often accessory to the escape of criminals, the use of them was prohibited under very severe penalties. It is said the flesh of the Elk has an agreeable taste. The skin of the European breed is so thick, that it has been often known to turn a musquet ball: nevertheless, it is soft, pliable, and, when tanned, is extremely durable, though light. The horns are applied to all the purposes for which harts-horn is beneficial.

In North America there is a species of the Elk, which the natives call a Moose Deer, and the French an Orignal. Of these kind of animals there are two sorts; the common light grey moose, which is not very large; and the black moose, which grows to an enormous height. Mr. Pennant thus describes a young female, which he saw at the Marquis of Rockingham's house, at Parson's Green. It was about a year old, and measured five feet, or fifteen hands to the top of the withers; the head alone was two feet long; the length of the animal, from the nose to the tail, was about seven feet: the neck was much shorter than the head: the mane was thick, short, erect, and of a light brown colour: the eyes were small: the ears were one foot long, very broad, and slouching: the nostrils were very large: the upper lip, which was square, projected considerably over the lower; and in the middle there was a furrow: the nose was broad: under the throat was a small excrescence, from whence depended a long tuft of coarse black hair: the withers were very high: the fore-legs were three feet three inches long; and from the bottom of the hoofs to the end of the tibia two feet four inches: the hind legs were much shorter than the fore ones: the hoofs were very much cloven; and the tail was very short, dusky above, and white beneath: the colour of the body in general was of a hoary black; but about the face there was a greater portion of grey than in any other place. As this animal was only a year old, and a female, we may reasonably conclude that the Elk, especially in America, will grow to an amazing size. It is indeed certain, that the American Elk, having larger forests to range in, and more luxuriant food, grows to a larger size than the European. In all places, however, it is timorous and gentle, content with its pasture, and never, when supplied itself, disturbs any other animal.

When the whole country is covered deeply with snow, the Moose Deer herd together; and at this time the Americans prepare to hunt them; particularly, when the sun begins to melt the snow by day, which is frozen again at night; for then the icy crust which covers the surface of the snow, is too weak to support so great a bulk, and only retards the animal's motion. When the Indians, therefore, perceive an herd of these animals at a distance, they immediately prepare for the pursuit, which is not, as with us, the sport of an hour, but is attended with toil, difficulty, and danger. The timorous animal no sooner perceives its enemies approach, than it immediately endeavours to escape, but sinks at every step it takes. Still, however, it pursues its way through a thousand obstacles. The snow, which is usually four feet deep, yields to its weight, and embarrasses its speed: the sharp ice wounds its feet; and



its lofty horns are entangled in the branches of the forest, as it passes along. The trees, however, are broken down with ease; and wherever the Moose runs, his track is perceived by their branches being snapped off with his horns. The chase lasts in this manner throughout the whole day; and sometimes it has been known to continue for two, nay, three days together; for the pursuers are often not less excited by famine, than the pursued by fear. By perseverance, however, they generally succeed; and the Indian who first comes near enough, darts his lance with unerring aim, which only increases the efforts of the wounded beast to escape: he now trots heavily on, in his usual pace, till his pursuer once more repeats his blow: yet, again it summons up sufficient vigour to get a-head; but, at last, quite tired, spent with loss of blood, and overcome by fatigue, it sinks down, and becomes an easy prey to the hunters, who esteem its flesh a valuable acquisition. This is easy of digestion; and though some pretend that it occasions the falling sickness, yet, the American hunters, who constantly feed on it in the proper season, never find any such pernicious effect. The skin they dress in the manner of buff. The hoof has been extolled as a remedy for the epilepsy, but, in reality, it has no more virtue than that of any other animal.

At the Cape of Good Hope, there is an animal which the Dutch call an Elk; and it is about five feet high, with a handsome head, resembling that of a stag, but it is small, and much too short, in proportion to the rest of the body. The horns are about a foot in length, and near the head they are very rugged; but towards the extremities are straight, smooth and pointed, which plainly shew, that this creature is improperly named. The neck is easy in its shape, and the upper lip is a very little longer than the lower. The legs are long and slender, and the tail is about a foot in length, quite unlike that of the Elk. The hair on the body is soft, smooth, and of an ash colour; and the flesh has the taste of very fine beef. The weight of these pretended Elks is about five hundred pounds. They frequent the mountainous parts of the country, and where there are good pastures, with well watered streams. They very readily climb up the highest and most craggy rocks, keeping their feet pretty close together, as they pass along. They attempt often to enter the gardens of the Dutch settlements, where, if they get in, they do a great deal of mischief. Their gardens are generally surrounded with a deep ditch, over which there is a long plank laid, or a bridge built. At one of the corners of this bridge they fix the great end of a pole in the ground, which is very strong, and pliable; and to the small end they fix a long rope, by which they bring it down in such a manner, that it will return back when set at liberty. This end so bent, reaches down to the other corner of the bridge, and the fastening of the rope is so contrived, that it will slip off with a very slight touch. The remaining part of the rope is made into a running noose, which is quite open at the entrance of the bridge under the bow, formed by the pole. Now the Elk finding no entrance, except over the bridge, endeavours to pass that way, and consequently must tread upon the part which lets go the rope, by which means one leg is caught in the running noose. By struggling he breaks the pole, and almost always falls into the ditch, where he is sure to be taken.

#### NATURAL HISTORY of the REIN-DEER.

**T**HIS extraordinary animal is a native of Lapland; and to be found in the frigid regions of the north. Many attempts have been made to reconcile it to warmer climates, but it soon feels the influence of the change, and, by a gradual decline, dies in a few months. The Rein-Deer resembles the American Elk in the fashion of its horns; for both have brow-antlers, very large, and hanging over their eyes, palmated towards the top, and bending forward like a bow. One thing seems peculiar to the Rein-Deer and the elk, which is, that as they move along, their hoofs are heard to crack with

a pretty loud noise: this arises from their manner of treading, for their cloven hoofs, which are moveable, spread as they run along the snow, and inclosing, when lifted up, they strike against each other.

The Rein-Deer is lower and stronger built than the stag: his legs are thicker; his hoofs broader; his hair warmer; his horns more lofty; and divide into two branches near the foot. These, when on a journey, are laid on his back; but the two branches which hang over the forehead, almost cover his face. His pace is rather a trot than a bounding, and this it can continue for a whole day. The female has horns as well as the male, by which the species is distinguished from all other animals of the deer kind whatsoever. When the Rein-Deer first shed their coat of hair they are brown; but, in proportion as summer approaches, their hair begins to grow nearly grey. They are always black about the eyes. They shed their horns at the latter end of November; and they are not completely furnished again till towards autumn. The female always retains hers till she brings forth, and then sheds them. Thus, from these circumstances, we see how greatly this animal differs from the common stag.

In Lapland the Rein-Deer are of two kinds, the wild and the tame. The former are larger and stronger, but more mischievous than the latter. Their breed, however, is preferred to that of the tame, whose female is often sent into the woods, from whence, after having continued some time with the wild male, she returns home. The tame deer are much fitter for drawing the sledge. To this service the Laplander accustoms them betimes, and yokes them to it by a strap, which goes round the neck, and comes down between their legs. The sledge is extremely light, and shod at the bottom, with a skin of a young deer, the hair turned to slide on the frozen snow. The person who sits on this guides the animal with a cord, fastened round the horns, encouraging him to proceed with his voice, and driving him with a goad. No creatures can be more active, patient, and willing: when hard pushed, they will trot nine or ten Swedish miles, or between fifty and sixty English ones, at a stretch; but this frequently proves fatal to the obedient creature. In general, they can go about thirty miles without halting, and without any great or dangerous efforts. But such journeys can be performed only in winter, when the snow is glazed over with ice: and although a speedy method of conveyance, yet it is inconvenient, and troublesome. These animals are made more tractable, and generally more serviceable, by a well known operation: those upon whom it is performed are found to be stronger in drawing the sledge, and become sooner fat when taken from labour. Usually one male is left entire for every six females: these do not begin to breed till they are two years old; and then they continue breeding regularly, every year, till they are superannuated. They go with young about eight months, and bring forth, generally, two at a time. The fondness of the dam for her young, is very remarkable. When they are separated from her, she will return from pasture, keep calling round the cottage for them, and will not desist until, dead or alive, they are brought and laid at her feet. The young follow the dam for two or three years; but their full growth is not acquired until four. They are then broke in for drawing the sledge. They never live above fifteen or sixteen years, and, when arrived at a proper age, the Laplander kills them for the sake of their skins and flesh.

Among the enemies to the Rein-Deer, the gnats deserve particular notice. These insects, bred by the heat of the sun, in the marshy bottoms, and the weedy lakes, with which the country abounds more than any other part of the world, are all, during the summer, upon the wing, and fill the air, in a dry, windy day, like clouds of dust. At this season the horns of the Rein-Deer being in a tender state, consequently possessed of extreme sensibility, a famished swarm of those insects settle upon them, and drive the poor animal almost to distraction. In this case there are but two remedies, to which the quadruped, as well as its master, are obliged to have recourse. The one is, for both to take shelter near their cottage,



cottage, where a large fire of tree moss is prepared, which, filling the whole place with smoke, keeps off the gnat, and thus, by one inconvenience, expels a greater; the other is to ascend to the highest summit of the mountains, where the air is too thin, and the weather too cold, for the gnats to endure. Here these animals are seen to continue the whole day, although without food, rather than to venture down into the lower parts, where they can have no defence against their unceasing persecutors. But, besides the gnat, there is likewise a gad-fly, that, in the summer is no less troublesome. This insect is bred under their skins, where the egg has been deposited the preceding year; and it is no sooner produced as a fly, than it again endeavours to deposit its eggs in some place similar to that from whence it came. The moment a single fly appears, the whole herd are instantly in motion: they know their enemy, and endeavour, by tossing about their horns, and running among each other, to terrify and avoid it; but, in general, without effect: the gad-fly deposits its eggs under the skin, wounds it in several places, and thus frequently brings on an incurable disorder, which occasions its death. There are also other formidable enemies which Rein-Deer have to dread. The bears sometimes make depredations upon the herd: but of all their foes, the creature called a Glutton, is the most dangerous, and most successful. This animal, which is not larger than a badger, will wait whole weeks together for its prey, concealed in the branch of some spreading tree; and when a wild Rein-Deer passes underneath, it instantly drops down upon it, fixing its teeth and claws in a part of the neck, just behind the horns. In vain the wounded deer flies for protection to the thicket, or among the lowermost branches of the forest; the glutton still keeps its ground; and although it often loses a part of its skin and flesh, which are rubbed off against the trees, yet it still holds fast, until its prey drops with fatigue and loss of blood. The deer has one only method of escape, which is by taking to the water: this element the glutton cannot endure, and therefore quits precipitately its hold, thinking only of providing for its own safety. To these external enemies, we may add several internal maladies, to which the Rein-Deer are subject, and which may also be ranked among their cruel persecutors. It is true they are hardy and vigorous animals, yet not without some peculiar diseases. Their teats are subject to cracking, so that blood comes instead of milk. They sometimes take a loathing to their food. They are subject to ulcers in the hoof, which unqualifies them for travelling, or keeping with the herd. They are also troubled with a vertigo, like the elk, turning often round till they expire. The Laplander judges of their state by the manner of their turning: if to the right, he thinks their disorder is but slight; if to the left, he pronounces it incurable. But the most fatal disorder of all, called by the natives suddataka, attacks this animal at all seasons of the year. The moment it is seized with this disease, it begins to breathe with great difficulty; its eyes stare; and its nostrils are expanded: it acquires also an unusual degree of wild ferocity, and attacks all it meets indiscriminately. Still, however, it continues to feed, as if in health; but is not seen to chew the cud, and it lies down more frequently than before. In this manner it continues, every day consuming, and growing leaner, till at last it dies; and not one attacked with this disorder are ever found to recover. It has but lately made its appearance in Lapland, but, during the last fifteen or twenty years, it has spoiled whole provinces of this necessary creature. This is a contagious disease, and the moment any of his herd is infected, the master hastens to kill them immediately, in order to prevent its spreading any farther. When examined internally, there is a frothy substance found in the brain, and the spleen is reduced almost to nothing.

Some herdsmen, in Lapland, are known to possess above a thousand Rein-Deer in a single herd; and there is scarce any part of this animal that is not converted by them to particular uses. The blood is preserved in

small casks to make sauce with the marrow in spring. The horns are sold to be converted into glue. The sinews are dried, and divided, so as to make the strongest kind of sewing thread, not unlike cat-gut. The tongues, which are considered as a great delicacy, are dried, and sold in the more southern provinces. The intestines are cleansed, like our tripe, and are in high esteem. The Laplander finds all his necessities amply supplied from this single animal. When growing old, and at other times before, it is killed, and the flesh dried in the air. It is also sometimes smoked, and laid up for travelling provisions, when the natives migrate from one part of the country to another. In the course of the winter, the Rein-Deer are slaughtered as sheep with us: every four persons in a family are allowed one for their week's subsistence. In spring, the herd is spared, and they live chiefly upon fresh fish. In summer, the milk and curd of the Rein-Deer constitute principally their daily food; and, in autumn, they live wholly upon fowls, which they kill with a cross bow, or catch with springes. The milk, when new, is warmed in a cauldron, and thickened with runnet; after which the curd is pressed into cheeses, which are little, and well tasted; nor do they breed mites as in other countries. The whey which remains is warmed up again, and becomes of a consistence as if thickened with the white of eggs: it is pleasant, well tasted, but not very nourishing. As to butter, they very seldom make any, because the milk affords but a very small quantity of cream; and the butter, in taste and consistence, more nearly resembles suet. They never keep their milk till it turns sour, and do not convert it into a variety of dishes, which the more southern countries are known to do. The only delicacy they make from it is with wood and sorrel, which being boiled with it, and coagulating, the whole is put into casks, or deer-skins, and kept under ground to be eaten in winter. Thus we see there is no part of this animal without its use: even the skin is a valuable article to the natives. From that part of it which covered the head and feet, they make their strong snow shoes, with the hair on the outside. Of the other parts they compose their garments, which cover them all over, and are extremely warm. The hair of these is on the outside, and they sometimes line them within with the fur of the glutton, or that of some other warm furred animal. These skins serve them also for beds. They spread them on each side the fire, upon some leaves of the dwarf birch-tree. Many garments and caps, made of the skin of the Rein-Deer, are sold every year to the inhabitants of the more southern parts of Europe; and they are found so serviceable in keeping out the cold, that even people of the first rank are known to wear them.

Nature seems to have fitted the Rein-Deer to answer the necessities of that hardy race of mankind who live near the Pole. As these would find it impossible to subsist among their barren, snowy mountains, without its aid, so this animal can live there, when its assistance is most absolutely necessary. From the Rein-Deer alone the natives supply most of their wants, in the cold regions of Lapland and Greenland; so that all-bounteous Providence does not leave these poor outcasts entirely destitute, but gives them a faithful domestic, more patient and serviceable, than any other in nature. Lapland is divided into two districts, the mountainous, and the woody. The mountainous part of the country is at best barren and bleak, excessively cold, and uninhabitable during the winter; still, however, it is the most desirable part of this frightful region, and is most thickly peopled during the summer. The natives generally reside on the declivities of the mountains, three or four cottages together, and lead a cheerful and a social life. Upon the approach of winter they are obliged to migrate into the plains below, each bringing down his whole herd, which often amounts to more than a thousand, and leading them where the pasture is in greatest plenty. The woody part of the country is much more hideous and desolate. The whole face of nature there presents a frightful scene of trees without fruit, and plains without verdure. As far as the eye can reach, nothing is to be



be seen, even in the midst of summer, but barren fields, covered only with a moss, almost as white as snow; no grass, no flowery landscapes, only here and there a pine-tree, which may have escaped the frequent conflagrations by which the natives burn down their forests. But what is very extraordinary, as the whole surface of the country is clothed in white, so, on the contrary, the forests seem to the last degree dark and gloomy. While one kind of moss makes the fields look as if they were covered with snow, another kind blackens over all their trees, and even hides their verdure. This moss, however, which deforms the country, serves for its only support, as upon it alone the Rein-Deer can subsist. The inhabitants, who, during the summer, lived among the mountains, drive down their herds in winter, and people the plains and woods below.

Such of the Laplanders as inhabit the woods and the plains all the year round, live remote from each other, and having been used to solitude, are melancholy, ignorant, and helpless. They are much poorer also than the mountaineers, for, while one of those is found to possess a thousand Rein-Deer at a time, none of these are ever known to rear the tenth part of that number. The Rein-Deer makes the riches of this people; and the cold mountainy parts of the country agree best with its constitution. It is for this reason, therefore, that the mountains of Lapland are preferred to the woods; and that many claim an exclusive right to the tops of hills, covered in almost eternal snow. As soon as the summer begins to appear, the Laplander who had fed his Rein-Deer upon the lower grounds, during the winter, then drives them up to the mountains, and leaves the woody country, and the low pasture, which at that season are truly deplorable. In the morning, as soon as the Lapland herdsman drives his deer to pasture, his greatest care is to keep them from scaling the summits of the mountains where there is no food, but where they go merely to be at ease from the gnats and gadflies that are ever annoying them. At this time, there is a strong contest between the dogs and the Deer; the one endeavouring to climb up against the side of the hill, and to gain those summits that are covered in eternal snows; the other, forcing them down, by barking and threatening, and, in a manner, compelling them into the places where their food is in the greatest plenty. There the men and dogs confine them; guarding them with the utmost precaution the whole day, and driving them home at the proper seasons for milking. Every morning and evening, during the summer, the herdsman returns to the cottage with his Deer to be milked, where the women previously have kindled up a smoky fire, which effectually drives off the gnats, and keeps the Rein-Deer quiet while milking. The female furnishes about a pint, which, though thinner than that of the cow, is, nevertheless, sweeter and more nourishing. This done, the herdsman drives them back to pasture; as he neither folds nor houses them, neither provides for their subsistence during the winter, nor improves their pasture by cultivation.

Upon the return of the winter, when the gnats and flies are no longer to be feared, the Laplander descends into the lower grounds; and, as there are but few to dispute the possession of that desolate country, he has an extensive range to feed them in. Their chief and almost their only food at that time, is the white moss already mentioned; which, from its being fed upon by this animal, obtains the name of the lichen *rangiferinus*. This is of two kinds: the woody lichen, which covers almost all the desert parts of the country like snow; the other is black, and covers the branches of the trees in very great quantities. However displeasing these may be to the spectator, the native esteems them as one of his choicest benefits, and the most indulgent gift of nature. While his fields are clothed with moss, he envies neither the fertility nor the verdure of the more southern landscape; dressed up warmly in his deer-skin cloaths, with shoes and gloves of the same materials, he drives his herds along the desert; fearless and at ease, ignorant of any higher luxury than what their milk and smoke-dried flesh afford them. Har-

dened to the climate, he sleeps in the midst of ice; or awaking, dozes away his time with tobacco; while his faithful dogs supply his place, and keep the herd from wandering. The Deer, in the mean time, with instincts adapted to the soil, pursue their food, though covered in the deepest snow. They turn it up with their noses, like swine; and even though its surface be frozen and stiff, yet the hide is so hardened in that part, that they easily overcome the difficulty. It sometimes however happens, though but rarely, that the winter commences with rain, and a frost ensuing, covers the whole country with a glazed crust of ice. Then, indeed, both the Rein-Deer and the Laplander are undone; they have no provisions laid up in case of accident, and the only resource is to cut down the large pine-trees, that are covered with moss, which furnishes but a scanty supply; so that the greatest part of the herd is then seen to perish, without a possibility of assistance. It sometimes also happens, that even this supply is wanting; for the Laplander often burns down his woods, in order to improve and fertilize the soil which produces the moss, upon which he feeds his cattle.

In this manner the pastoral life is still continued near the pole; neither the coldness of the winter, nor the length of the nights; neither the wildness of the forest, nor the vagrant disposition of the herd, interrupt the even tenour of the Laplander's life. By night and day he is seen attending his favourite cattle, and remains unaffected, in a season which would be speedy death to those bred up in a milder climate. He gives himself no uneasiness to house his herds or to provide a winter subsistence for them; he is at the trouble neither of manuring his grounds, nor bringing in his harvests; he is not the hireling of another's luxury; all his labours are to obviate the necessities of his own situation; and these he undergoes with cheerfulness, as he is sure to enjoy the fruits of his own industry. If, therefore, we compare the Laplander with the peasant of more southern climates, we shall have little reason to pity his situation; the climate in which he lives is rather terrible to us than to him; and, as for the rest, he is blessed with liberty, plenty, and ease. The Rein-Deer alone supplies him with all the wants of life, and some of the conveniences, serving to shew how many advantages nature is capable of supplying, when necessity gives the call. Thus the poor little helpless native, who was originally, perhaps, driven by fear or famine into those inhospitable climates, would seem, at first view, to be the most wretched of mankind: but it is far otherwise; he looks round among the few wild animals that his barren country can maintain, and singles out one from among them, and that of a kind which the rest of mankind have not thought worth taking from a state of nature; this he cultivates, propagates, and multiplies, and from this alone derives every comfort that can soften the severity of his situation.

#### THE VIRGINIAN DEER.

The Virginian Deer is about the size of the English fallow deer, and of a light brown colour. Its tail is longer than that of the English buck. It is a distinct species, and peculiar to America. They are found in vast herds; are always in motion, and very restless; but they are not fierce. Their flesh, though dry, is of the utmost importance to the Indians, who dry it for their winter provision. Their skins are a great article of commerce, vast numbers of them being annually imported from our colonies. In the northern parts of America, they feed, during the winter, on the moss which hangs in long strings from the trees. They have slender horns, bending very much forwards, and have numerous branches on the interior sides; but they have no brow antlers.

#### THE SPOTTED AXIS.

This animal is about the size of a fallow deer, and of a light red colour; the body being beautifully marked with white spots: along the lower part of the sides next the belly is a line of white. The tail, which is about the length of that of a fallow deer, is red above, and white beneath. It has slender triple-forked horns; the first branch



branch near the base, and the second near the top; each pointing upwards. It inhabits the banks of the Ganges, and the islands of Ceylon and Java. They will bear our climate, and breed in the prince of Orange's menagery near the Hague. They are very tame, and have the sense of smelling to an exquisite degree. Though they are fond of bread, they will not touch a piece that has been breathed upon.

#### The PORCINE DEER.

The height of this animal, from the shoulders to the hoof, is about two feet two inches; the length of its body, from the tip of the nose to the tail, three feet six inches: its horns are slender, triple pronged, thirteen inches in length, and six inches distant at the base; and its head about ten inches long. The body of this animal is thick and clumsy, its tail about eight inches long, and its legs fine and slender. It is brown on the upper part of the neck, body, and sides, but of a lighter colour on the belly and rump. The late Lord Clive had one of these in his possession, which he brought from some part of India. From the thickness of its body, this animal is also called a hog-deer.

#### The MEXICAN DEER.

The Mexican Deer is about the size of the European roe; the colour of its hair is reddish, and, when young, spotted with white. It inhabits Mexico, Guiana, and Brasil. It is a species very distinct from the roe of the old continent; and its flesh is inferior to that of the European venison. It has strong thick rugged horns, ten inches long, and bending forward. It has a large head, a thick neck, and its eyes are large and bright.

#### The GREY DEER.

This is an obscure species, and naturalists are not agreed whether it is a deer, a musk, or female antelope; for the horns were wanting in the animals described by Linnæus. It is of a grey colour, and about the size of a cat; it has a line of black between the ears, and a large black spot above the eyes: it has a line of the same colour on each side of the throat, pointing downwards: the middle of the breast is black; and the fore-legs and sides of the belly, as far as the hams, are marked with black: the ears are long, and the under side of the tail is black.

#### The HIPPELAPHUS.

The Hippelaphus of Dr. Keys and Gesner, seems to be a sort of an Elk, with the horns of a roe-buck; and is to be met with in Norway. He is of the size of an elk, and in shape, partakes both of the horse and the stag; he has hair like a beard, hanging down from his throat. He has a well compacted body, long slender legs, with a cloven hoof, and a very short tail; but his head and ears are pretty much like those of a mule; only his upper lip hangs over the lower, almost as much as in an elk. He has a mane like a horse, but thinner, and more upright. Likewise from the shoulders to the tail there is a little mane, which grows like bristles along the back-bone.

#### NATURAL HISTORY of the MUSK.

THE more we search into nature, the more we shall find how little she is known; and we shall more than once have occasion to find, that protracted enquiry is more apt to teach us modesty, than to produce information. Although the number and nature of quadrupeds at first glance seems very little known; yet, when we come to examine closer, we find some with which we are very partially acquainted, and others that are utterly unknown. There is scarce a cabinet of the curious but what has the spoils of animals, or the horns or the hoofs of quadrupeds, which do not come within former descriptions. There is scarce a person whose trade is to dress or improve furs, but knows several creatures by their skins, which no naturalist has hitherto had notice of. But of all quadrupeds, there is none

so justly the reproach of natural historians, as that which bears the musk. This perfume, so well known to the elegant, and so very useful in the hands of the physician, a medicine that has for more than a century been imported from the East in great quantities, and during all that time has been improving in its reputation, is, nevertheless, so very little understood, that it remains a doubt whether the animal that produces it be an hog, an ox, a goat, or a deer. When an animal with which we are so nearly connected, is so utterly unknown, how little must we know of many that are more remote and unserviceable! Yet naturalists proceed in the same train, enlarging their catalogues and their names, without endeavouring to find out the nature, and fix the precise history of those with which we are very partially acquainted. It is the spirit of the scholars of the present age, to be fonder of encreasing the bulk of our knowledge than its utility; of extending their conquests than of improving their empire.

The musk which comes to Europe, is brought over in small bags, about the size of a pigeon's egg, which, when cut open, appear to contain a kind of dusky reddish substance, like coagulated blood, and which, in large quantities, has a very strong smell; but when mixed and diffused, becomes a very agreeable perfume. Indeed, no substance now known in the world has a stronger or a more permanent smell. A grain of musk perfumes a whole room; and its odour continues for some days, without diminution. But in a larger quantity it continues for years together; and seems scarce wasted in its weight, although it has filled the atmosphere to a great distance with its parts. It is particularly used in medicine, in nervous and hysteric disorders; and is found, in such cases, to be the most powerful remedy now in use: however, the animal that furnishes this admirable medicine, has been very variously described, and is known but very imperfectly.

The description given of this animal by Grew, is as follows. The Musk animal is properly neither of the goat or deer kind, for it has no horns, and it is uncertain whether it ruminates or not; however, it wants the fore teeth in the upper jaw, in the same manner as in ruminating animals; but, at the same time, it has tusks like those of a hog. It is three feet six inches in length, from the head to the tail; and the head is above half a foot long. The fore part of the head is like that of a greyhound; and the ears are three inches long, and erect, like those of a rabbit; but the tail is not above two inches. It is cloven-footed, like beasts of the goat kind; the hair on the head and legs is half an inch long, on the belly an inch and an half, and on the back and buttocks three inches, and proportionably thicker than in any other animal. It is brown and white alternately, from the root to the point; on the head and thighs it is brown, but under the belly and tail white, and a little curled, especially on the back and belly. On each side of the lower jaw, under the corners of the mouth, there is a tuft of thick hair, which is short and hard, and about three quarters of an inch long. The hair, in general, of this animal, is remarkable for its softness and fine texture; but what distinguishes it particularly are the tusks, which are an inch and an half long, and turn back in the form of an hook; and more particularly the bag which contains the musk, which is three inches long, two broad, and stands out from the belly an inch and an half. It is a very fearful animal, and, therefore, it has long ears; and the sense of hearing is so quick, that it can discover an enemy at a great distance.

After so long and circumstantial a description of this animal, its nature is but very little known; nor has any anatomist as yet examined its internal structure; or been able to inform us whether it be a ruminant animal, or one of the hog kind; how the musk is formed, or whether those bags in which it comes to us be really belonging to the animal, or are only the sophistications of the venders. Indeed, when we consider the immense quantities of this substance which are consumed in Europe alone, not to mention the East, where it is in still greater repute than here, we can hardly suppose that any one animal can furnish the supply;



ply; and particularly when it must be killed before the bag can be obtained. We are told, it is true, that the musk is often deposited by the animal upon trees and stones, against which it rubs itself when the quantity becomes uneasy; but it is not in that form which we receive it, but always in what seems to be its own natural bladder. Of these, Taverner brought home near two thousand in one year; and as the animal is wild, so many must, during that space, have been hunted and taken. But as the creature is represented very shy, and as it is found but in some particular provinces of the East, the wonder is how its bag should be so cheap, and furnished in such great plenty. The bag in common does not cost above a crown by retail, and yet this is supposed the only one belonging to the animal; and for the obtaining of which, it must have been hunted and killed. The only way of solving this difficulty, is to suppose that these bags are, in a great measure, counterfeit, taken from some other animal, or from some part of the same, filled with its blood, and a very little of the perfume, but enough to impregnate the rest with a strong and permanent odour. It comes to us from different parts of the East; from China, Tonquin, Bengal, and often from Muscovy: that of Thibet is reckoned the best, and sells for fourteen shillings an ounce; that of Muscovy the worst, and sells but for three: the odour of this, though very strong at first, being quickly found to evaporate.

Musk was some years ago in the highest request as a perfume, and but little regarded as a medicine; but at present its reputation is totally changed; and having been found of great benefit in physic, it is but little regarded for the purposes of elegance. It is thus that things which become necessary cease to continue pleasing; and the consciousness of their use, destroys their power of administering delight.

#### NATURAL HISTORY of the CAMELO-PARDALIS.

**T**HIS is a very uncommon animal, there having not been above one or two seen in Europe; at

least out of the Turkish dominions, for many hundred years. It is called by the natives Zurnapha, and by some authors Giraffa; but by the Greeks, Camelo-Pardalis; because as they suppose it is generated between a Camel and a Leopard, for Pardalis is the Greek name for a Leopard.

The writers on natural history have been at a loss in what class of animals to place it; however, Linnæus ranks it with that of the deer kind, but whether the horns fall off every year, or not, like those of the deer, is very uncertain. It is a very mild, gentle animal, and has a head like a stag, with blunt horns, about six inches long, covered with hair, and without branches. The neck has some resemblance of that of the camel, but is much longer, being seven feet in length; though the Germans affirm, that that which was seen in their country, had a neck fifteen feet long, adorned with a mane like a horse. The ears, tongue, and feet, are like those of a cow; but the legs are very slender, and what is very remarkable, those before are much longer than those behind; insomuch, that at a distance, you would imagine the animal reared up upon his hind legs. The body is small covered with white hair, spotted with red, which renders the skin very valuable. It has no fore teeth in the upper jaw, and the tail is long, and bushy at the end, with hair as long as hogs bristles; though that on the body is slender, soft, and fine. The fore feet are moved both together when he runs, and not one after another, as other animals do. He is only to be met with in the woods, which makes it very probable, that he feeds on the leaves and buds of trees; for he cannot reach the grass on the ground with his mouth, without straddling very enormously. Some authors have asserted, that he has a tongue two feet in length, and round like an eel; but perhaps without any good authority. Both sexes have horns, but those of the male are longest. He is eighteen feet in length, from the tail to the top of the head; and when he holds up his head it is sixteen feet from the ground. He is judged to be of the deer kind, from the hairiness of his horns.

## C H A P. V.

### The NATURAL HISTORY of QUADRUPEDS of the HOG Kind.

*Containing a descriptive Account of the HOG; the WILD BOAR; the GUINEA; the CHINESE; the PEC-CARY, or MEXICAN; the ETHIOPIAN; the BABYROUESSA; the CABIAI, or CAPIBERA; the RHINOCEROS; the HIPPOPOTAME, or SEA-HORSE; the TAPIR; the ELEPHANT, &c.*

**I**N animals of the hog kind those distinctions seem to unite, by which others are separated. They resemble those of the horse kind in the number of their teeth, which in all amount to forty-four, in the length of their head, and in having but a single stomach. They resemble the cow kind in their cloven hoofs, and the position of their intestines; and they resemble those of the claw-footed kind in their appetite for flesh, in their not chewing the cud, and in their numerous progeny. Thus this species serves to fill up that chasm, which is found between the carnivorous kinds and those that live upon grass; being possessed of the ravenous appetite of the one, and the inoffensive nature of the other. We may consider them, therefore, as of a middle nature, which we can refer neither to the rapacious nor the peaceful kinds, and yet partaking somewhat of the nature of both. Like the rapacious kinds, they are found to have short intestines; their hoofs also, though cloven to the sight, will, upon anatomical inspection, appear to be supplied with bones like beasts of prey; and the number of their teats also increase the similitude: on the other hand, in a natural state they live upon vegetables, and seldom seek after animal food, ex-

cept when urged by necessity. They offend no other animal of the forest, at the same time that they are furnished with arms to terrify the bravest.

#### NATURAL HISTORY of the H O G.

**T**HE male of a Hog is called a Boar, the female, a Sow, and their young a Pig. These are very well known, and therefore need no description; however, it may be observed, that of all animals those of the hog-kind are most brutal; the imperfections of their form seem to influence their natural dispositions; all their appetites are unclean, and their pleasures more beastly than those of other creatures. Their voraciousness probably arises from the great capacity of their stomach, which is in this animal of the largest size, and their uncleanness from the small sense they have of feeling, as mice have been known to lodge in their backs, and eat their fat without their seeming to be sensible of the injury. They may be fattened in a wonderful manner more than any other animal, and the fat is collected between the fleshy panicle, and the skin, which



which is quite otherwise in ruminating animals. The Sow has a double row of paps on her belly to the number of twelve, and she sometimes brings forth twenty pigs at a time. She goes four months with young, and is said to live from fifteen to twenty years. In choosing a Hog, the buttocks ought to be fleshy; the belly large and prominent; the sides long and deep; the snout short and turning a little upwards; and the hair rough, thick set, and strong.

The Sow commonly takes the Boar at eight months old; but there is some difference according to the diversity of the countries, air, and climate in which they are bred; for the warmer the climate the sooner; and the colder the later. One Boar is enough for ten Sows, and he may be fit for the Sow at a year old, or somewhat less; but after six years it will be best to lay him aside. The Boar Pigs are to be castrated while they are young; some say at half a year and others at two years of age. It is the common opinion, that if Sows are splayed before they are fatted, they will grow fat the sooner. The flesh of Hogs, called pork, is best in hot countries; yet the Mahometan religion have prescribed this wholesome food from the greatest part of the East Indies; but in China, and those parts of the East, that do not acknowledge the Mahometan law, their pork is finer than in any other part of the world; and it makes a principal part of the food of that extensive region. In Europe, Westphalia hams are accounted best, and in England, the bacon of Hampshire.

The caul of the Hog is folded behind the stomach; but when it is unwrapped, it is large enough to cover half of the lower belly in some subjects; and in others it will reach to the pubes. The duodenum has some small sinuosities on the right side; and it has a fold behind the kidney of the same side, from whence it passes to the left. The circumvolutions of the jejunum are in the upper region, and on the right side; but those of the illium are in the right illiac, and hypogastric region. The place where this gut joins the cæcum, is different in different subjects. The colon extends forward to the place from whence the cæcum proceeds, and forms circumvolutions that are almost oval; they are placed over the small guts, and are united by the cellular web seeming to form a floating mass. After this it passes to the right behind the stomach, then turns back afterwards more inward, and lastly joins the rectum. The small guts are of the same thickness throughout their extent; and the cæcum is thicker than the colon; for this decreases as it approaches the rectum.

The stomach takes up the fore part of the lower belly, and extends almost the whole breadth from the right to the left. The distance is but very small between the gullet, and the angle formed by the right part of the stomach when it bends upwards; and that part which is to the left of the gullet, is almost as long as that on the right. In most Hogs the liver lies almost as much to the left as to the right, but in some few it is chiefly to the right. It is composed of four lobes, three to the right, and one to the left, either wholly, or in part. The gall bladder is placed in a furrow of the middle lobe, but sometimes it is wanting, and then the gall bladder is within the lobe. The liver of the Boar Pig abovementioned, weighed two pounds and eleven ounces, and was of a livid colour within and without. The spleen of Hogs in general, is about half as broad as long, and the lower part is somewhat more narrow and slender, than the upper. That of this Boar, was of a reddish colour, and weighed three ounces and five drachms; the pancreas consisted of three branches, that united near the pylorus; the longest branch extended to the left kidney, the shortest lay along the duodenum, and the third, which was seated between the two former, was the thickest at the extremity. The kidneys of Hogs are oblong and flat, with a large pelvis; and the nervous centre of the diaphragm has two branches, which extend backwards; the right lobe of the lungs is divided into four, and the left into two; the heart is placed obliquely, and the shape is somewhat different in different subjects. The tongue,

is sprinkled with small white grains or specks; and there are two flat glands near a quarter of an inch long, and half a quarter broad. The palate is crossed with very deep furrows, and the thirteen foremo. are terminated, or bordered at the top with a roundish filler. They are all crossed by another furrow that runs lengthways through the middle of the palate.

The fat of a Hog, called the lard, is anodyne and emollient, and is in great use to make pomatum; in some places, nurses rub the gums of children with it, that they may breed their teeth more easy. Etmuller affirms, that three heads of garlick pounded, with a sufficient quantity of lard, and applied to the soles of the feet, is an excellent remedy against night coughs. It must be done before the fire; and, when in bed, the spine of the back must be rubbed therewith; he assures us, that if this be done three times, the cough will infallibly cease.

#### The WILD BOAR.

The Wild Boar, which is the original of all the varieties of the Hog kind, is neither so stupid nor so filthy an animal as that which we have reduced to tameness: his body is much smaller than that of the tame hog; his snout is longer; and his ears, which are black, are rounder and shorter. He does not vary in his colour like those of the domestic kind, being always of an iron-grey, inclining to black; his feet and tail are black. His tusks are larger than those of the common hog; some of them, as Mr. Buffon asserts, having been seen almost a foot long. These grow from both the upper and under-jaw, bending upwards circularly, and are exceeding sharp at the points.

The whole litter of pigs follows the sow the three first years, and the family lives in the herd together; uniting their common forces against the wolf, or other beasts of prey. But, when the Wild Boar is arrived at the state of maturity, he becomes conscious of his own strength, and walks the forest fearless and alone. He is then afraid of no single enemy, and will not turn out of his way even for man himself; he does not seem to seek nor to avoid danger. He inhabits most parts of Europe, except the British isles, and the countries north of the Baltic. He is found in Asia, from Syria to the borders of the lake Baikal; in Africa, on the coasts of Barbary. In the forests of South-America, these animals are found in vast droves. They are useful in America, by clearing the country of rattle-snakes, which they devour with safety.

This animal feeds chiefly upon roots and vegetables: being content with such provisions as it procures without danger, it seldom attacks any other animal: but, if an animal happens to die in the forest, or is so wounded that it cannot make any resistance, it becomes his prey, for he never refuses animal food, however putrid, if he can procure it without difficulty.

The hunting the Wild Boar is a favourite amusement among the nobility in those countries where they inhabit. Small mastiffs are generally used upon these occasions, for the hunters are regardless of the goodness of their nose, the Wild Boar leaving so strong a scent that it is impossible for them to mistake its course. When the Boar is driven from his covert, he proceeds slowly and regularly, at a small distance before his pursuers, without appearing to be much afraid. Once in about an half-mile, he turns round, stops till the hounds come up to him, and offers to attack them. The dogs, sensible of their danger, keep off, and bay him at a distance. After gazing upon each other for some time, the Boar proceeds slowly on his course, and the dogs renew their pursuit. The chase is thus continued till the Boar is quite weary, and refuses to proceed. The dogs then attempt to close in upon him; those which are young, and unaccustomed to the chase, are generally foremost in the attack, and are often killed. The old experienced hounds wait till the huntsmen come up, who strike at him with their spears, and soon dispatch to disfigure him.

The Wild Boar was formerly a native of this island, as appears from the laws of Hoel Dda, who permitted his



his grand huntsman to chase that animal from the beginning of November till the middle of December. William the Conqueror punished with the loss of their eyes, such as were convicted of killing the wild boar, the stag, or the roe-buck; and Fitz-Stephens informs us, that the vast forest, at that time on the north side of London, was the retreat of stags, fallow-deer, wild boars, and bulls.

#### The GUINEA HOG.

The Guinea Hog is smaller than the common kind, though shaped like ours, it is of a reddish shining colour, with long sharp-pointed ears, and a tail without hair, which hangs down to the heels. It has no bristles; but about the neck and the lower-part of the back, the hair is longer than on the other parts of the body. It is a domestic variety of the common kind, and the flesh is said to be excellent.

#### The CHINESE HOG.

The belly of this animal almost reaches to the ground; it has short legs, and a tail hanging down to the heels. Its body is usually bare, as all the swine of India generally are.

#### The PECCARY, or MEXICAN HOG.

The Peccary, in some degree, resembles a small hog of the common kind, but its body is not so bulky, its legs are smaller, its bristles thicker and stronger than those of the European kind, and more like those of a hedge-hog; instead of a tail, it has got a little fleshy protuberance, which does not cover its posterior: from the shoulders to the breast, it has a band of white; and, upon its back, a lump resembling the navel in other animals, which discharges a liquor of a very foetid smell. It is a native of the hottest parts of South-America, and some of the Antilles, and lives in the forests, chiefly on the mountains. It is not so fat as the common hog, nor does it delight in mire or marshy places.

These animals assemble in great droves; they will fight valiantly with the beasts of prey. The most inveterate enemy is the jaguar, or American leopard, and the body of that animal is frequently found with several of these hogs, slain in combat. It is seldom that dogs will venture to attack the peccary; and, if wounded, it will turn on the hunter. It feeds on fruits, vegetables, roots, toads, and serpents; and is very dexterous in skinning the latter, holding them with his fore-feet. Its flesh is said to be good for food, but, as soon as it is killed, the dorsal gland must be cut out immediately, or the flesh will become so infected as not to be eatable. If this operation be deferred for only half an hour, the flesh becomes utterly unfit to be eaten.

The peccary may be tamed like the hog, has nearly the same habits and inclinations, and feeds upon the same aliments. They are remarkably fierce when their young are attempted to be taken from them; they surround the plunderer, attack him, and frequently make his life pay the forfeit of his rashness. The peccary, like the hog, is very prolific; and the female is followed by the young ones till they come to perfection. Though, when taken young, they are very easily tamed, they never shew any remarkable signs of docility, but continue without attachment; not seeming to know the hand that feeds it.

#### The ÆTHIOPIAN HOG.

The body of this animal is longer, and the legs shorter than in the common swine. It has small tusks in the lower-jaw, and very large ones in the upper; those of old boars bending up towards the forehead in the form of a semi-circle; it has no fore-teeth, a large broad head, with a nose broad, depressed, and almost as hard as horn. Its mouth is small; the colour of its skin is dusky, and its bristles disposed in little bunches of about five each; which are longest on the beginning of the back, and between the ears. Its ears are sharp-pointed and large, the inside being lined with long

whitish hairs. Its tail is small and flat, does not extend below the thighs, and is covered with hairs disposed into tufts or bunches. They inhabit the hottest parts of Africa, from Senegal to Congo; they are also found in the island of Madagascar. They are very swift and fierce, and will not breed either with the domestic or Chinese sow. One of these animals, at the prince of Orange's menagery near the Hague, was turned out to a Chinese sow, which it killed; and afterwards to a common sow, which he treated very roughly.

#### The BABYROUESSA, or INDIAN HOG.

This animal has some weak bristles along the back, but the rest of the body is covered with fine short wool, resembling that of a lamb: the tail ends in a tuft, and is often twisted. The body is square and plump, and the head is oblong and narrow, with a snout proper for rooting in the earth. The ears are small, erect, and sharp-pointed; and the eyes are very small. It has four cutting-teeth in the upper, and six in the lower-jaw; with six grinders to each jaw; it has also two tusks in the lower-jaw, pointing towards the eyes, and standing almost eight inches out of their sockets. From two sockets on the outside of the upper-jaw, proceed two other teeth, twelve inches long, and bending like horns, their ends almost touching the forehead. It inhabits Buero, a small island near Amboyna: it is found also in Celebes, but neither on the continent of Asia or Africa. In the Indian islands, these animals are sometimes kept tame. In their wild state they live in herds, and feed on vegetables: they never, like other swine, ravage gardens. When these animals are pursued and driven to extremities, they will rush into the sea, or any other water, and swim from island to island. They are also expert in diving. The tusks, as may be perceived by their form, are useless in combat; but they delight in resting their heads, by hooking their upper-tusks on some bough. The feet are like those of the European hogs, and their legs long and slender.

#### The CABIAI, or CAPIBERA.

The Cabiai, in the shape of its body, and the colour and coarseness of its hair, resembles an hog of about two years old. It has a short thick neck, a rounded bristly back, delights in the water and marshy places, produces many young at a time, and, like the hog, feeds upon both animal and vegetable food. The head, however, is longer than that of the hog, the eyes larger, and the snout is split, like that of a rabbit or hare, and furnished with strong thick whiskers. The mouth of the Cabiai is smaller, its teeth are different, and it is without tusks. It has no tail, and, instead of a cloven hoof, like all others of this kind, it is, in a great degree, web-footed, and calculated for swimming, and living in the water. It seems, indeed, to delight in that element, and some naturalists have therefore called it the water-hog. It inhabits South-America, and, like the otter, is chiefly seen frequenting the borders of lakes and rivers. It preys upon fish, which it seizes with its hoofs and teeth, and carries them to the margin of the lake or stream, to devour at its ease. It also feeds upon corn, fruits, and sugar-canes. The cry of this animal rather resembles the braying of an ass, than the grunting of an hog. It seldom appears, except at night, and then not without company. It never ventures far from the water, that element being its only place of safety; for its feet are so long, and its legs so short, that it is a very slow and awkward runner. When pursued by the hunter, it plunges into a lake or river, and continues so long at the bottom, that he can have no hopes of taking it there.

This animal is naturally of a gentle disposition, and, when taken young, is easily tamed. It is then obedient to command, and appears attached to its keeper. Its flesh, which is fat and tender, has a fishy taste; but its head is said to be delicate food. In this respect, it resembles the beaver, whose fore-parts taste of flesh, and the hinder have a strong flavour of the fish it feeds on.



## NATURAL HISTORY of the RHINOCEROS.

**T**HIS animal inhabits Bengal, Siam, Cochinchina, Quangsi in China, the islands of Java, and Sumatra, Congo, Angola, Æthiopia, and the country as low as the Cape. Next to the elephant, the Rhinoceros is the most powerful of animals. Bontius informs us, that in respect to bulk of body, it equals the elephant, but is lower on account of the shortness of its legs. It is generally about twelve feet long, from the tip of the nose to the insertion of the tail; and from six to seven feet high.

This animal is so remarkably formed, that a perfect idea of its shape cannot be conveyed in words, we have therefore been particularly careful in giving an accurate delineation of it on copper. Its head is furnished with a single horn, placed near the end of the nose, which is generally from three feet to three feet and an half long. The upper-lip is long, hanging over the lower, and ending in a point. It is very pliable, and serves to collect its food, and deliver it into the mouth: the nostrils are placed transversely: the ears are large, erect, and pointed; the eyes small, and without lustre: the skin is almost naked, rough, and knotty, and lying upon the neck and body in vast folds. The skin, which is of a dirty brown colour, is so hard and thick as to resist a musket-ball: the belly hangs low; the legs are short, strong, and thick; and the hoofs divided into three parts, each pointing forward. It delights in shady forests, and the neighbourhood of rivers and marshy places: like the hog, it loves to wallow in the mire, and is said, by that means, to give shelter in the folds of its skin, to scorpions, centipes, and other insects. It is a solitary, quiet, and inoffensive animal, but swift and furious when it is enraged. It never provokes to combat, but it equally disdains to fly. It brings forth but one at a time, about which it is extremely solicitous.

The scent of this animal is said to be most exquisite; and it is affirmed that it consorts with the tiger: this, however, is fabulous, and founded on their common attachment to the sides of rivers; because they both frequent watery places, in the scorching climates where they are bred. It is also reported to have a tongue so extremely rough, as to take off the flesh from the human body by licking it, but Ladvoat affirms, "it is smooth, soft, and small, like that of a dog."

This animal appears chiefly formidable from the horn growing from its snout. It is composed of the most solid substance, and pointed so as to inflict the most fatal wounds. With every blow, the Rhinoceros employs all its force, and the tiger will more willingly attack any other enemy of the forest than this formidable creature. It is defended on every side by a thick horny hide, which cannot be pierced by the claws of the lion or the tiger, and it is armed before with a weapon that even the elephant does not choose to oppose. It is said the elephant is often found dead in the forests, pierced with the horn of a Rhinoceros; and Emanuel, king of Portugal, by way of experiment, actually opposed them to each other, and the Rhinoceros was victorious.

In 1739, a Rhinoceros was shewn in London, which came from Bengal. It was of a gentle disposition, and suffered itself to be handled by all visitors, never attempting to do any mischief, except when hungry or when abused; in such cases, its fury could only be appeased by giving it something to eat. When it was angry, it would jump with violence against the walls of its room, but seldom attempted to attack its keeper, and was obedient to his threats.

The Rhinoceros brings forth at about three years old, and will live till it is about twenty. Its flesh is eaten, and Kolben says, it is very good. Cups are made of its horn, and many medicinal virtues are ascribed to it, when taken in powder, but seemingly without foundation. There are some varieties in this animal found in Africa with a double horn.

The Rhinoceros is the unicorn of Holy Writ, and of No. 6.

the ancients; the oxys, and the Indian ass of Aristotle, who says it has but one horn: his informers might well compare the clumsy shape of the Rhinoceros to that of an ass, so that he might easily be induced to pronounce it a whole footed animal. The unicorn of Holy Writ has all the properties of the Rhinoceros.

This animal was known to the Romans in very early times; its figure is among the animals of the Prænetine pavement; and Augustus introduced one into his shews on his triumph over Cleopatra.

## NATURAL HISTORY of the HIPPOPOTAME, or SEA-HORSE.

**T**HE Hippopotame is as large and formidable as the rhinoceros, and, in bulk, is second only to the elephant. The length of the male has been found to be seventeen feet, from the extremity of the snout to the insertion of the tail; the circumference of its body fifteen feet, and its height almost seven; the legs near three feet, and the head almost four. Hasselquist says, its hide is a load for a camel. Its jaws extend about two feet, and it has four cutting-teeth in each jaw, which are above a foot long. The head is of an enormous size; the ears small and pointed, and lined within with a short fine hair: on the lips are some strong hairs scattered in bunches. The hair on the body is very thin, of a lightish colour, and, at first sight, hardly discernible. Those writers who say this animal has a mane on its neck, are mistaken; but the hairs on that part are rather thicker than on the other parts of the body: the skin is very thick and strong, and, though not able to resist a musket-ball, is impenetrable to the stroke of a sabre. The tail is flat and pointed, and about a foot long: the hoofs are divided into four parts, and, in some measure, resemble those of the elephant; but they are unconnected with membranes, notwithstanding the Hippopotame is an amphibious animal.

This creature, whose figure is something between that of an ox and a hog, resides chiefly at the bottom of the great rivers and lakes of Africa, from the Niger to the Cape of Good Hope. It is found in none of the African rivers which run into the Mediterranean, except the Nile; and even there only in the Upper Egypt; and in the lakes and fens of Æthiopia, which that river passes through. It leads an indolent kind of life, and seems seldom disposed for action, except when prompted by the calls of hunger. In the water they pursue their prey with great swiftness and perseverance, and continue at the bottom for thirty or forty minutes without rising to take breath. They traverse the bottom of the stream with as much ease as if they were walking upon land, and make a terrible devastation where they discover plenty of prey. But when the fishy food is not supplied in sufficient abundance, this creature is forced to come upon land, where it moves awkwardly and slowly; and, if it cannot be supplied with food on the margin of the river, it is forced up into the higher grounds, where it commits dreadful havock on the sugar-canes, and plantations of rice and millet: it also feeds on the roots of trees, which it loosens with its great teeth.

When the natives see their possessions thus destroyed by this animal, they beat drums, light fires, and raise a terrible outcry to frighten it back to its favourite element. As it is extremely timorous upon land, they usually succeed in their endeavours. But if the creature should be wounded, or too much irritated, it then becomes formidable to all that oppose it. When it is pursued it takes the water, plunges in and sinks to the bottom, but it frequently rises to the surface, and remains with its head out of water, making a bellowing noise that may be heard at a vast distance. If wounded, it will rise and attack boats or canoes with great fury, and often sink them by biting large pieces out of the sides. People are thus frequently drowned by them; for they are as bold in the water as they are timid on land. This animal, however, possesses a very inoffensive disposition, and never attacks the mariners in their boats,



except they inadvertently strike against it, or otherwise disturb its repose; but they are then in imminent danger of going to the bottom. Dampier informs us, that one of these animals was seen to place itself under a boat, and, rising under it, over-set it, with six men which were in it.

The crocodile and shark have been said to engage with the hippopotame, but an eye witness has declared that he saw them swimming together without any disagreement; and, it is well known, that the shark is only found at sea, and the Hippopotame never ventures beyond the mouth of fresh-water rivers.

Though the negroes will venture to attack the shark or the crocodile in their natural element, and frequently destroy them, they are so sensible of the force of the Hippopotame, that they seldom attempt to engage it.

A herd of females has but a single male: the female always comes upon land to bring forth, and seldom produces above one at a time. These animals are at that time extremely timorous, and as soon as the parent hears the slightest noise, it dashes into the stream, and the young one follows it immediately.

This animal is capable of being tamed. Belon says he has seen one so gentle, as to be let loose out of a stable, and fed by its keeper, without attempting any mischief. The usual method of taking them is by pitfalls. In some parts, the natives place boards full of sharp irons, in the corn-grounds, which these creatures strike into their feet, and so become an easy prey. Sometimes indeed (though that method is very seldom attempted) they are struck in the water with harpoons fastened to cords: and ten or twelve canoes are employed in the chase.

The young ones are said to be excellent food: and the negroes, who are not extremely nice in their diet, find an equal delicacy in the old. Dr. Pocock informs us, that he has seen their flesh exposed to sale on the shambles; and it is said, that the breast in particular is excellent, and as delicate as veal. The teeth of this animal are harder than ivory, and not so liable to turn yellow: they are much used by the dentists to be made into false teeth. The skin, which, when dried, is of impenetrable hardness, is used to make bucklers.

This animal is the behemoth of Job: it was known to the Romans; and Augustus produced one at his triumph over Cleopatra.

The Hippopotame was worshipped at Papremis, a city of Egypt, lest that monstrous animal should envy so many other savage beasts, which divers nations of Egypt had deified.

#### NATURAL HISTORY of the TAPIIR.

**T**HIS animal bears some distant resemblance in its form to a hog. It has a long snout, capable of being contracted or extended at pleasure. Its ears are erect, its eyes small, and its legs and tail short. The Tapiir grows to the size of an heifer half a year old. When young its hair is short, and spotted with white; when old, of a dusky colour. This creature is found among the woods and rivers on the eastern side of South America, from the isthmus of Darien to the river of Amazons. In the day time it sleeps in the forests adjacent to the banks, and goes out at night in search of food, which is chiefly grass, sugar-canes, and fruits: it swims well, and, when disturbed, takes to the water, where, like the hippopotame, it walks on the bottom as on dry ground. The Indians shoot it with poisoned arrows, and eat its flesh, which is said to be very good. Its skin, which is very thick, the natives make shields of, which cannot be pierced by an arrow. This animal is salacious, slow-footed and sluggish: but will make a vigorous resistance, when attacked.

There is another creature of this kind, called the thick-nosed Tapiir, which has a large head and nose, large eyes, and small rounded ears. Its toes, which are long, are connected near their bottoms by a small web; and their ends guarded by a small hoof. It has no tail,

but has long hard whiskers on the nose. This animal may in some measure be termed amphibious, as it not only feeds on fruits and vegetables, but also on fish, which it is dexterous in catching, and brings on shore to eat: it sits up, holding its prey with its fore-feet, and feeds like an ape. Like the preceding, it inhabits the Eastern side of South America, and makes a noise like the braying of an ass. The flesh of this animal is tender, but has a fishy taste.

#### NATURAL HISTORY of the ELEPHANT.

**T**HE Elephant is the largest of land animals, and is not less remarkable for its docility and understanding than for its size. All historians concur that next to man, the Elephant is the most sagacious animal; and yet, from its appearance only, we should be led to conceive very meanly of its abilities. It has a long trunk, formed of multitudes of rings, pliant in all directions, and terminated with a single moveable hook, which answers the purpose of a hand to convey any thing into the mouth. The forehead of this animal is very high and rising, the ears long, broad, and pendulous, the eyes extremely small, the body round and full, the back rising in an arch, and the whole animal short in proportion to its height. The legs are thick, clumsy, and shapeless; the hide of a dusky colour, with a few scattered hairs, and full of scratches and scars, which it acquires in its passage through the thick woods and thorny places; the tail like that of a hog; the feet undivided, but the margins terminated by five round hoofs. In the upper-jaw are two vast tusks of six or seven feet long.

This animal, we are told, is seen from seven to fifteen feet high: we have, however, certain accounts of their attaining to the height of twelve feet. The female is less than the male, and the udder is between the fore-legs.

The Elephant is the strongest, as well as the largest of all quadrupeds; and yet in a state of nature, it is neither fierce nor formidable: it is intelligent, tractable, and obedient to its master's will; sensible of benefits, and capable of resenting injuries. In its native deserts, the Elephant is seldom seen alone, but appears to be a social friendly animal. It inhabits India, and some of its greater islands, Cochin-China, and some of the provinces of China. Elephants are found in great plenty in the southern parts of Africa, from the river Senegal to the Cape; and from thence as high as Ethiopia on the other side: they swim well, and delight in marshy places, and to wallow in the mire like a hog. They feed on the leaves and branches of trees; and, if they get into an inclosure, they destroy all the labours of the husbandman in a very short time.

Nothing can be more formidable than a drove of Elephants: wherever they march, the forest seems to fall before them, and, in their passage, they bear down the branches upon which they feed. There is no repelling their invasions, since it would require a small army to attack the whole drove when united; and an attempt to molest them, at that time, would certainly be fatal. They advance towards the offender, strike him with their tusks, seize him with their trunks, toss him in the air, and afterwards trample him to pieces under their feet. They are, however, very mild and harmless, except they are offended, or during the rutting-time, when they are seized with a kind of temporary madness.

In their natural state, they are chiefly found along the sides of rivers; they are also fond of refreshing themselves in the most shady forests and watery places. They cannot live at a distance from the water, and they always disturb it before they drink. After filling their trunk with it, they often divert themselves by spurring it out like a fountain. When an elephant happens to light upon a spot of good pasture, he invites others, by a call, to share in the entertainment; but it requires a copious pasture to supply the necessities of a herd of them: their heavy feet sink deep wherever they go, and much



much more is destroyed than is devoured. On this account they are obliged frequently to change their quarters. The Indians, and Negroes, who suffer by such visitants, endeavour to keep them away by making loud noises, and keeping large fires round their cultivated grounds; but, notwithstanding these precautions, the Elephants frequently break through their fences, destroy their whole harvest, and overturn their little habitations.

The eyes of the Elephant, as already observed, are very small, but they exhibit a variety of expression, and discover the various sensations with which the animal is moved. The Elephant is not less remarkable for the excellence of its hearing: it appears delighted with music, learns to beat time, to move in measure, and even to accompany the sound of the trumpet, or other instruments, with its voice. Its sense of smelling is also exquisite; but, in the sense of touching, it exceeds all others of the brute creation, and perhaps even man himself. The organ of this sense lies wholly in the trunk; this instrument is both an organ of touching, and of suction; it not only provides for the animal's necessities and comforts, but also serves for its ornament and defence.

In Africa, this animal still retains its natural liberty: the savage inhabitants of that part of the world, are happy in being able to protect themselves from its fury, without attempting to subdue it to their necessities. But when once tamed, the Elephant becomes the most courteous and obedient of all animals. It presently conceives an attachment for the person who attends him, caresses him, and even endeavours to anticipate his wishes. It quickly comprehends the signs made to it, and even the different sounds of the voice: all its actions seem to partake of its magnitude; being grave, majestic, and serious. It is readily taught to kneel down to receive its rider; and, those whom he knows, he caresses with his trunk; and, with the same instrument salutes those which it is ordered to distinguish. It suffers itself to be harnessed, and appears to be delighted with the finery of its trappings. It draws either chariots, cannon, shipping, or small towers with numbers of people in them, with surprizing strength and perseverance; and, notwithstanding its bulk, it is extremely swift.

The Elephant often sleeps standing; but that they are incapable of lying down, is a vulgar error. They are said to go one year with young, and to bring forth one at a time; they are thirty years before they arrive at their full growth, and will live about one hundred and twenty, or one hundred and thirty years. They are much more numerous in Africa than in Asia: in some parts there are such swarms, that the Negroes are obliged to make their habitations under ground for fear of them. The usual method of taking them is in pitfalls, covered with branches of trees: sometimes they are hunted, and killed with lances; a slight wound in the head be-

hind the ear, destroys them in a moment. Their flesh is eaten by the natives, and the trunk is said to be a delicious morsel. Their teeth are frequently picked up in the woods of Africa; but it is uncertain whether they are shed, or from dead animals. The African teeth, which come from Mosambique, are ten feet long; and those of Malabar only three or four: the largest in Asia are those of Cochin-China, which even exceed the Elephants of Mosambique. The skin is very thick, and, when dressed, proof against a musket-ball. The bones are used in medicine.

This animal has a very quick sense of glory. An Elephant was directed to force a large vessel into the water, and, the task proving superior to his strength, the master, in a sarcastic tone, ordered the keeper to take away that lazy beast and bring another. The poor animal was so affected at the reflection, that it instantly repeated its efforts, fractured its skull, and died on the spot.

At the Cape of Good Hope, where it is customary to kill these animals in the chase for the sake of their teeth, three brothers, who were Dutchmen, made a large fortune by that business, and determined to retire to Europe to enjoy the fruits of their labours; but, before their return, they resolved to have a last chase by way of amusement. After finding their game, and beginning the attack in the usual manner, one of their horses threw its rider: the enraged animal instantly seized the unhappy man with its trunk, tossed him up into the air, and received him on one of its tusks; then, turning towards the other two, seemingly with an aspect of revenge, held to them the impaled wretch writhing on the bloody tooth.

From very early times the Indians have employed the Elephant in their wars. Porus opposed the passage of Alexander over the Hydaspes, with eighty five of these animals. Mr. Buffon very readily supposes, that it was some of the Elephants taken by that monarch, and afterwards transported into Greece, which were employed by Pyrrhus against the Romans. Ivory has been used in ornamental works from the time of Solomon; it was one of the imports of his navy at Tharshish, whose lading was gold and silver, ivory, apes, and peacocks. *Kings I. 10.*

The American Elephant is an animal only known in a fossil state. The fossil bones are found in Peru, and the Brazils; but the living animal has evaded our search: it is probable that it yet exists in some of those remote parts of the vast new continent, unvisited yet by Europeans. The Elephant, it is said, is taken for the symbol of eternity, on account of its length of life. On a medal of the emperor Philip, eternity is represented by an Elephant, on which is mounted a little boy holding arrows. In the kingdom of Bengal, in the Indies, the white Elephant is in possession of the honours of the divinity.

## C H A P. VI.

### The NATURAL HISTORY of ANIMALS of the MONKEY Kind.

*Containing a descriptive Account of the OURANG OUTANG, or WILD MAN of the Woods; the APE, the BABOON, the MONKEY, the MAUCOCO, and their numerous Varieties; the GERBUA; the OPOS-SUM, and its Kinds, &c.*

**A**NIMALS of the ape or monkey class have hands instead of paws; their ears, eye-lids, lips, and breasts, resemble those of the human race; and their internal conformation bears some distant likeness. This reflection is sufficient to mortify the pride of those, who make their persons alone the principal object of their admiration. Those animals have fingers and

nails on their hands like those of a man, but more rough and unpolished. Their feet are like larger hands, and are divided into fingers or toes, of which that in the middle is the longest.

They are lively, agile, and full of frolic, chatter, and grimace: from the structure of their body, they have many actions in common with the human kind. They are,



are, in general, fierce and untameable; but some are of a milder nature, and will shew some degree of attachment, but they are naturally mischievous. They are filthy, obscene, lascivious, and thieving. They inhabit woods, and live in trees; they feed on fruits, leaves, and insects. They will leap from tree to tree with great activity, even when loaded with their young, which cling to them. They go in general in vast companies; but the different species never mix with each other, always keeping apart in different quarters. They are the prey of leopards, and others of the cat race: they are also the prey of serpents, which pursue them to the summit of the trees, and swallow them entire. Though they are not carnivorous, they will (purely for the sake of mischief) rob the nests of birds of the eggs and young. In the countries where apes most abound, the sagacity of the feathered tribe is marvellously shewn, in their contrivance to fix the nest beyond the reach of these invaders.

These animals, however, are so very different from each other, that a general description cannot serve; we shall therefore give an history of the foremost in each, and mark the distinctions in every species; carefully observing the manners and the oddities in this phantastic tribe in general points of view.

Ape were held in veneration at Egypt, as were all other animals. Diodorus says, that the worship of apes passed from Egypt into the island of Pityusa, called The Island of Apes, on account of the honours there paid to them.

#### NATURAL HISTORY of the OURANG OUTANG, OR WILD MAN OF THE WOODS.

**T**HIS name is given to various animals, agreeing in one common character of walking upright, but of different proportions, and coming from different countries. The Ourang Outang, which, of all other animals, most nearly approaches to the human race, is found from three to seven feet high. Its face is flat, and has a deformed resemblance of the human face; its ears are exactly like those of a man. The hair on the head is longer than that of the body, and is reddish and shaggy. The face, paws, and soles of the feet, are swarthy and without hair. In the palms of the hands those lines appear which are usually taken notice of in palmistry. In a word, the whole animal is so nearly a picture of the human species, that we are naturally led to expect a corresponding mind. But this, says Mr. Buffon, is an evident proof that no disposition of matter will give mind; and that the body, how nicely so ever formed, is formed in vain, when there is not infused a soul to direct its operations.

The Ourang Outang described by Dr. Tyson, was brought from Angola, in Africa. The body was covered with black hair, greatly resembling human hair; and, in those places where it is longest on the human species, it was also longest in this. The face resembled the human face, but the forehead was larger, and the head round. The jaws were not so prominent as in monkeys, but flat like those of a man. The ears were also like those of a man; and the teeth had more resemblance to the human, than those of any other creature. And, in short, the whole animal, at first view, presented a human figure. This animal was a gentle, fond, and harmless creature. In its passage to England, those who knew it on board the ship were highly entertained with it; for it would embrace them with the utmost tenderness, opening their bosoms, and clasping its hands about them; and, though there were monkeys aboard, it would never associate with them, and seemed to consider itself as a creature of higher extraction. After it had been a little used to wear cloaths, it grew fond of them, and would endeavour to put them on himself; taking such parts of his dress, as he could not properly manage, to some of the company to assist him in dressing. It would get into bed, place its head on the pillow, and cover itself with the cloaths, like any human creature.

These animals, when taken young, are capable of being tamed, and are taught to carry water, pound rice, and turn a spit. There was one shewn in London in 1738, which was extremely mild, affectionate, and good-natured, and remarkably fond of the people it was used to: it would eat and lay down in bed like a human creature; fetch a chair to sit on; drink tea, which, if he found too hot, he would put into a saucer to cool: it would cry like a child, and be very unhappy at the absence of its keeper. This was a young one, and only two feet four inches high.

The Ourang Outang inhabits the interior parts of Africa, the island of Sumatra, Borneo, and Java. They are solitary, and prefer the most desert places, and live entirely on fruit and nuts. The large ones have prodigious strength, and will over-power the strongest man. Only the young can be taken alive, for the old ones are shot with arrows: they will attack, and even kill, the negroes who wander in the woods; they will drive away the elephants, and beat them with their fists, and pieces of wood; and will throw stones at people that offend them. They sleep in trees, in which they shelter themselves from the inclemency of the weather. They appear grave and melancholy, and are not inclined to frolic even when they are young. They have great agility and swiftness, and sometimes carry away the young negroes. These animals certainly vary in colour; the hair is black on some, and red on others.

We are informed by Le Compté, in his history of China, that, when one of these animals dies, the rest cover the body with leaves and branches of trees. There are instances also of their shewing mercy to the human kind. A negroe boy was taken by one of these and carried into the woods, where he continued with him a whole year without receiving any injury. It is also said that these animals often attempt to surprize the female negroes as they go into the woods, and force them to continue with them for the pleasure of their company, feeding them very plentifully all the time. Le Brosse assures us that he knew a woman of Loango, who had lived three years among them.

#### The PYGMY APE.

This animal has a flattish face, and ears like those of a man. The body is about the size of a cat; the colour of the hair an olive brown, and yellowish beneath. It feeds on fruits and insects, and is particularly fond of ants. These animals assemble in troops, and turn over every stone in search of them. It inhabits Africa, and is not uncommon in our exhibition of animals. It is very tractable, and of a gentle disposition.

#### The LONG-ARMED APE.

The Long-armed Ape, called by Mr. Buffon, the gibbon, is a very extraordinary and remarkable creature. It has a flat swarthy face, surrounded with grey hair; and the hair on the body is black and rough. It walks erect, and is without a tail: its eyes are large, and sunk in its head; and it is of different sizes from two to four feet high. The nails on the hands are flat, and those on the toes long. It differs from all others of the monkey tribe by the extraordinary length of its arms, which are long enough to reach the ground when the animal stands erect. It is an inhabitant of the East-Indies, particularly along the coasts of Coromandel; and is a mild and gentle animal.

#### The MAGOT, or BARBARY APE.

This animal, like the former, is without a tail, though there is a small protuberance on that part. It has a large callous red rump. The face is prominent, and not so much like that of man as of quadrupeds. The body is covered with a dirty greenish brown hair, and the belly with a dull pale yellow. It has flat nails, ears like human ears, and bare buttocks. It is about three feet and an half high, and is a native of most parts of Africa, and the East. It is a very fierce and mischievous animal; is a very common kind in exhibitions; and, by the force of severe discipline, is made to perform some tricks. In the open fields in India, they assemble



assemble in great troops, and frequently attack women who are going to market, and take their provisions from them.

#### The TUFTED APE.

The head of this animal is about fourteen inches in length; the face blue, and naked, and the nose of a deep red; the eye-brows are black, and the ears like human ears. It has a long upright tuft of hair on the top of the head, and another under the chin; and two long tusks in the upper-jaw. Its fore-feet resemble human hands, and the nails on the fingers are flat. The fore-part of the body, and the inside of the legs and arms are naked. The outside is covered with mottled brown and olive coloured hair; that on the back is dusky; the buttocks are red and bare; and the length of the animal from the nose to the rump is about three feet three inches. It has a most disgusting appearance, and is very fierce and salacious. It usually goes on all-fours, but will sometimes sit on its rump, and support itself with a stick. It will hold a cup in its hand in this attitude, and drink out of it. This animal feeds principally on fruits.

#### The SIMIA PORCARIA.

Aristotle mentions a species of Ape under the title of *simia porcaria*; but it must be a species we have not any knowledge of at this time. In the British Museum there is a drawing of one with a nose exactly resembling that of a hog, which may perhaps be the animal which Aristotle meant; but there is no account attending the painting, to enable us to trace its history.

#### NATURAL HISTORY of the BABOON.

**T**HE Baboon, properly so called, is about three feet and an half high, with a thick body and limbs, and long canine teeth. It has large callosities behind, which are quite naked and red. Its tail, which is about seven inches long, is thick and crooked. Its face is long and thick, and it has a pouch on each side of its cheeks, where it deposits the remainder of its provisions, after it is satiated with eating. The hair with which it is covered, is of a reddish brown. It sometime walks erect, but generally upon all-fours; and, instead of broad round nails like the ape, its hands and feet are armed with long sharp claws. This animal, thus made for strength, and furnished with dangerous weapons, is a formidable enemy. We are informed by the chevalier Forbin, that in Siam large troops of Baboons frequently fall forth from their forests, and attack a village when they know the men are engaged in their rice-harvest; where they make lascivious attacks upon the women, who are obliged to stand on their defence with clubs and other arms, and it is with difficulty that they oblige their ugly suitors to retreat.

Though equally mischievous, they are less formidable at the Cape of Good Hope. Whatever they undertake they perform with surprising skill and regularity. When they rob an orchard or a vineyard, they go in large companies, and previously concert a regular plan for the conducting of their business. On these occasions some of them enter the inclosure, while others are set to watch. The rest form a line without the fence, reaching from their fellows within to their rendezvous without, which is generally in some craggy mountain. Every thing being thus disposed, the plunderers within the orchard, throw the fruit to those that are without, as fast as they can gather it; and it is pitched from one to another all along the line, until it is safely deposited at their head quarters. They are extremely dextrous in catching, and while the business is performed, a profound silence is observed among them. Their sentinel continues upon the watch the whole time; and, if he perceives any person coming, instantly sets up a loud cry, at which the whole company scamper off: but even under these circumstances, they are unwilling to leave the place empty-handed, but carry off some of their plunder in their mouths, some in their hands, and some under their arms.

No. 6.

If they are closely pursued, they first drop that which is under their arms, then that from their hand, and afterwards that from their mouths.

These animals have not been known to breed in our climate. The female in general produces but one at a time, which she carries in her arms, and in a peculiar manner clinging to her breast. Baboons are not carnivorous, but feed principally upon fruits, roots, and corn, and usually keep together in large companies. Their internal parts are more unlike those of man than of quadrupeds, particularly the liver, which resembles that of a dog, divided into six lobes.

#### The MANDRIL.

The Mandril mentioned by Smith, in his voyage to Guinea, is an ugly disgusting animal, and probably only a variety of that mentioned in the preceding article. He says it grows to a vast size, being from four to five feet high, and has a short tail. The body is as thick as that of a man; the teeth large and yellow; the head extremely large, and the face broad, flat, wrinkled, and covered with a white skin; but what makes it truly loathsome, is that something is always issuing from the nose. It is a native of the Gold Coast, and more frequently walks erect, than upon all-fours; when displeased, it is said to weep like a child. Some years ago one of them was shewn in England, which seemed tame but stupid; and had a method of opening its mouth, and blowing at those who came near it.

#### The WANDEROW.

The Wanderow is a smaller Baboon than the former, and has a tail from seven to eight inches long; the muzzle is prominent, as in the rest of this kind; but it is remarkable for having a large long white head of hair, and a monstrous white beard, coarse, rough, and descending: the rest of the body is brown or black. In its savage state it is very fierce; but, with proper management, is more tractable than most of its kind.

#### The LITTLE BABOON.

This animal has a roundish head, a projecting mouth, and ears roundish and naked. The thumb is close to the fingers; the nails of the fingers narrow and compressed, and those of the thumbs rounded: it has a brown face, with a few scattered hairs; the colour of the hair on the body is yellowish, tipped with black: the tail is about an inch long, and the buttocks are covered with hair. Linnaeus says it is about the size of a squirrel; but Mr. Balk, in the *Aman. Acad.* says it is as large as a cat. It is a lively species, and inhabits India.

#### The PIG-TAIL BABOON.

This animal, which is called the Maimon, by Buffon, and the Pig-Tail, by Mr. Edwards, is the last of the Baboons. Its length, from head to tail, is about twenty-two inches. Its principal distinction, besides its prominent muzzle like a Baboon, is in the tail, which is about five inches long, and curled up like that of a hog; from which circumstance Mr. Edwards gave it the name. It is a native of Sumatra and Japan, and cannot well endure the rigours of our climate; though Mr. Edwards kept one of them near a year in London. This creature is very docile, is taught several tricks in Japan, and is carried about the country by mountebanks. One of these people informed Kämpfer, that the Baboon in his possession was an hundred and two years old.

#### NATURAL HISTORY of the MONKEY.

**M**ONKEYS are small in stature, and have long tails, by which they are distinguished from the apes and baboons, that entirely want the tail, or are large, and have but a short one. The varieties in the form and colour of dogs or squirrels, is not so great as among the Monkeys of the smaller kind. Bosman and Smith enumerate above fifty sorts on the Gold Coast alone; and Condamine says it would fill a volume to describe the different sorts which are found along the river



river Amazons; and which are different from those on the African coast. There is scarce a country in the tropical climates that does not swarm with them; and almost every forest is inhabited by a race of Monkeys distinct from all others; but their differences are very trifling. It is, however, remarkable, that the Monkeys of two cantons never mix with each other: each forest produces only its own; and those guard their limits from the intrusion of all strangers of a different race from themselves.

The Monkey being less than the baboon, is endued with less powers of doing mischief: the ferocity of their nature appears to diminish with their size; they are more easily tamed, and sooner taught to imitate man than the former. They are not so grave and sullen as the ape, and are more gentle than the baboon; they begin early to exert all their sportive mimickries, and are obedient to correction.

The Monkeys may be considered as the masters of every forest where they reside. Neither the lion nor the tiger will venture to dispute the dominion with them, since they carry on an offensive war from the tops of trees, and by their agility escape all possibility of pursuit. These animals, says Le Compte, have a peculiar instinct in discovering their foes, and, when attacked, are very adroit in defending and assisting each other. When they behold a traveller in the woods, they consider him as an invader upon their dominions, and join to repel the intrusion. After surveying him with a kind of insolent curiosity, they jump from branch to branch, and tree to tree, pursuing him as he goes along, and make a loud chattering to summon the rest of the companions together. After grinning and threatening, they begin their hostilities by throwing down the withered branches at him, which they break from the trees. Thus they follow him wherever he goes, jumping from tree to tree with amazing swiftness. It is said, from good authority, that, when any one of them is wounded, the rest assemble round him, putting their fingers into the wound, as if they intended to sound its depth: if the blood flows plentifully, some of them keep the wound closed, while others procure leaves, which they chew, and thrust into it. In these unequal engagements, they seldom make a retreat until many of them are killed; and, when they retreat, the young one clings to the back of the dam, with which she jumps away, without seeming to be embarrassed by the burthen.

The usual method of taking these animals alive, is to shoot the female as she carries her young; and the sportsman always takes aim at the head; which, if he hits, the Monkey falls immediately to the ground, and the young one consequently comes down at the same time, clinging to its dead parent. The negroes on the coast of Guinea are happy to see their numbers destroyed upon a double account; for they dread their devastations, and are fond of their flesh. The Monkey, when skinned, and served up at a Negroe feast, so strongly resembles a child, that an European shudders at the sight.

The manner of plundering among the Monkeys, is much like that of the baboons in a garden, as already mentioned. They generally keep together in companies, march in exact order, and obey the voice of some particular chieftain, distinguishable for his size and gravity. One species of these, which by Mr. Buffon is called the ouarine, have very loud and distinct voices, and are remarkable for the use to which they convert them. Morgrave informs us that he has frequently been a witness of their assemblies and deliberations: every morning and evening they assemble in the woods, to receive instructions; one among the number takes the highest place on a tree, and waves his hand as a signal for the rest to sit around and be attentive. He then, with a loud voice, begins his discourse, and, while he is speaking, the rest observe the most profound silence. When he has finished his harangue, he again waves his hand, as a signal for the rest to reply, and instantly they raise their voices together; until, by another signal of the hand, they are enjoined silence. This is immediately obeyed, and the chieftain replies to

what the others have said; after which the whole assembly breaks up.

They feed upon fruits, the buds of trees, or succulent roots and plants; and are fond of the juice of the palm-tree and the sugar-cane. The fertile regions in which these animals are bred, seldom fail to supply them with these; but, when there is a deficiency, they feed on insects and worms; and if near the coasts, they sometimes descend to the sea-shore, where they eat lobsters, crabs, and other shell-fish. Their manner of managing oysters, though extraordinary, is well attested; they pick up a stone, and place it between the opening shells, which prevents them from closing, and they eat the fish at their ease. They are equally subtle in taking crabs: they put their tail to the hole where that animal takes refuge, and the crab fastening upon it, they withdraw with a jerk, and thus pull their prey upon shore. Being dextrous in laying traps for others, they are very cautious of being entrapped themselves; and, it is said, no kind of snare will take the Monkeys of the West India islands; as they are extremely distrustful of human artifice, to which they have been accustomed.

The Monkey seldom brings forth more than one at a time, though sometimes it produces two. They seldom breed after they are brought into Europe, but those that have bred here exhibit a very striking picture of parental affection. The male and female are never weary of fondling their young, and frequently hand it from one to the other.

In a state of domestic tameness these animals are very entertaining. Father Carli, in his History of Angola, informs us, that when he went into that horrid country to convert the savage natives to Christianity, where he met with nothing but distress, disease, and disappointment, he found more faithful services from the Monkeys than the men; these he had taught to attend him, to guard him when he was sleeping against the thieves and rats, to comb his head, and to fetch his water; and he asserts that they were more tractable than the human inhabitants of the place. It is a just observation, that in those countries where the men are most barbarous and stupid, the brutes are most active and sagacious. The savages of the torrid tracts suppose Monkeys to be men, capable of speech and conversation; but obstinately dumb, for fear of being compelled to labour.

The Monkeys of the new continent are distinguishable from those of the old by three marks. Those of the old have a naked callous substance behind, upon which they sit; which those of America are entirely without; those of the old have nostrils more resembling those of men, with the holes opening downward; but those of America have them opening on each side: those of the antient continent are furnished with pouches on each side of the jaw, where they deposit their provisions; which the American Monkeys have not. It is also remarkable, that many of the American sorts are known to hang by the tail, which those of the old continent are never known to do. We shall first enumerate those of the old continent.

#### The Dog-Faced MONKEY.

This animal has a long thick nose, covered with a smooth red skin; the nails on the fore-feet are flat, and those on the hind-feet like a dog's. These creatures inhabit the hottest parts of Africa and Asia; they keep together in large troops. When passengers are going by, they run up the trees, and shake the boughs at them with great fury; chattering very loud at the same time. They are excessively impudent and indecent; and are, both in their manners and appearance, very detestable animals.

#### The Lion-Tailed MONKEY.

The face of this Monkey is long, and resembling that of a dog; it is also naked and of a dusky colour. This creature has a full white beard, and large canine teeth. Its body is covered with black hair, except on the belly, where it is of a light colour. Its nails are flat, and the tail



tail is terminated with a tuft of hair, like that of the lion. It is a native of the East-Indies, and the hotter parts of Africa.

#### The Hare-Lipped MONKEY.

The nostrils of this Monkey are divided like those of a hare. Its nose is thick, flat, and wrinkled. The head is large, the eyes small, the teeth very white, and the body thick and clumsy. Its colour is sometimes brown, sometimes yellowish, and sometimes olive. The tail, which is somewhat shorter than the body, is always carried arched. It is an inhabitant of Guinea and Angola, and is full of frolic and ridiculous grimaces. A few years ago, one that was apparently of this species, was shewn in London, and was about the size of a greyhound.

#### The Spotted MONKEY.

This animal has a long white beard; the upper-parts of the body are of a reddish colour, marked with white specks. The belly and the chin are whitish. It has a very long tail, and is a species of a middle size. It is a native of Guinea and Congo.

#### The Green MONKEY.

The Callitrix, or Green Monkey of St. Jago, is distinguished by its beautiful green colour on the back, its white breast and belly, and its black face. It has a long and slender tail, and is of the size of a small cat. It inhabits different parts of Africa. On account of their green colour, they are scarce discernable among the leaves, except they break the branches of trees by their gambols, in which they are very active, and very silent. They make no noise even when they are shot at; but assemble together, knit their brows, and gnash their teeth, as if they intended to attack their foes. They are very numerous in the Cape-Verd islands.

#### The MANGABEY.

The Mangabey, or white eye-lid monkey, may be distinguished from all others by its eye-lids, which are naked, and of a striking whiteness. It has a long black naked and dog-like face. The colour of the body is tawny and black. It has flat nails on the thumbs and fore-fingers, and blunt claws on the others. Its hands and feet are black; and it is a native of Madagascar.

#### The TALAPOIN.

The Talapoin may be distinguished as well by its beautiful variety of green, white, and yellow hair, as by that under the eyes being longer than any of the rest. It has a sharp nose, a round head, and large black naked ears; the length of the body of this animal is about a foot, and it has a slender tail, about seventeen inches long. It is a native of India.

#### The Negroe MONKEY.

This animal has a round head, and a sharpish nose; the face is of a tawny flesh-colour, with a few black hairs on it; the breast and belly are of a swarthy flesh-colour, and almost naked; the hair on the body, limbs, and tail, is long and black. It is about the size of a large cat, and its paws are covered with a black soft skin. It is lively, entertaining, and good-natured, and is a native of Guinea.

#### The Chinese MONKEY.

This Monkey has a long smooth nose, of a whitish colour; the hair on the crown of the head is long and flat, and parted like that of a man; the colour is a pale brown. It is a native of Ceylon, where troops of them assemble together to rob orchards and corn-fields. If they are drove from one end of the orchard or field, they have the impudence to enter immediately at the other, and carry off with them as much as their mouths and arms will contain.

#### The NUNA, or Varied MONKEY.

This animal is distinguished by its colour, which is variegated with black and red; and its tail is of an ash-

colour, with two white spots on each side, at its insertion. The length of the animal is about eighteen inches, and the tail two feet. It is a native of Barbary, Ethiopia, and other parts of Africa.

#### The Douc, or the Large MONKEY of Cochîn-China.

This animal is called the Douc in Cochîn-China, of which country it is a native. It seems to unite all the characters of the monkey kind. It is as large as the baboon; it has a tail like the monkey, and a flat face like the ape. It also resembles the American monkeys in having no callus on its posteriors. It is a very large species, about four feet long, from the nose to the tail; but the tail is not so long. It is a native of Madagascar, as well as Cochîn-China; and often walks on its hind feet.

#### The Tawny MONKEY.

The face of this animal is a little protuberant, and that and the ears are flesh-coloured. It has a flattish nose, and long canine teeth in the lower-jaw. The hair on the upper-part of the body is pale and tawny; but ash-coloured at the roots; the hinder-part of the back is orange-coloured, and the belly white. It is about the size of a cat, and its tail is shorter than its body. It is a native of India, and is very ill-natured.

#### The Winking MONKEY.

This animal has a short face covered with hair, and a white nose. The hair on the body is black, marked with some circles of a lighter colour. Its tail is straight, and pretty long; its thumbs are very short, and its buttocks are covered. It is a native of Guinea, is very sportive, and perpetually winking.

#### The Goat MONKEY.

The beard of this animal is long, resembling that of a goat; it has a naked face of a deep blue, and ribbed obliquely. Its body and limbs are of a deep brown, and its tail is long. There is a drawing of this animal in the British Museum.

Having described the monkeys of the old world, we shall now proceed to those of the continent of America, which have neither pouches in their jaws, nor naked posteriors.

#### The WARINE.

The Warine, or the Brazilian Guariba, is as large as a fox, with long black hair, and a long tail, always twisted at the end. It has black shining eyes, short round ears, and a round beard under the chin and throat. It inhabits the woods of Brasil and Guiana, and is the largest of the monkey kind to be found in America. It is remarkable for the loudness of its voice, and for making a most dreadful howling. It is common for one of these creatures to mount on an high branch, and the rest to seat themselves on the branches beneath. That which is elevated above the rest sets up a loud and sharp howl, that may be heard at a great distance. After he has harangued the company for some time, he gives a signal with his hand, and the whole assembly joins immediately in the chorus. When a second signal is given, they become silent, and the orator finishes his speech. Their clamour, upon these occasions, is more disagreeable and tremendous than can be imagined. These monkeys are very fierce, mischievous, and untameable.

#### The COAITI, or Four-Fingered MONKEY.

This Monkey may be distinguished from the rest, by having no thumb, and consequently but four fingers on each of the two fore-paws. But the tail supplies the defects of the hand; and with this the animal flings itself from tree to tree with surprising rapidity. It has five toes on the feet, flat nails, a slender body, and a long tail. This animal is about eighteen inches long. It inhabits the neighbourhood of Carthagena, Brasil, and Peru. These monkeys are very active, and quite enliven the forests of America. In order to pass from top to top of lofty trees, whose branches are too distant



for a leap, they will form a chain, by hanging down linked to each other by their tails; and swinging in that manner till the lowest catches hold of a bough of the next tree, and draws up the rest; and Ulloa tells us they sometimes pass rivers in the same manner. They are sometimes brought into Europe, but they are too tender to live long in our climate.

#### The SAJOU.

The Sajou is distinguished by its yellowish flesh-coloured face. Its hands and feet are covered with a black skin, and its tail, which is longer than its head and body, it frequently carries over its shoulders. It is a native of Guiana, and is a very lively species; but, in a state of captivity, it is very capricious in its affections, having a very great fondness for some persons, and as great an aversion to others.

#### The SAI, or WEEPER.

This animal is called the Weeper, from its peculiar manner of lamenting, when it is either threatened or beaten. It is very much deformed, has a round flattish face, and is of a reddish brown colour. The hair on the head, and the upper part of the body, is black, tinged with brown; beneath, and on the limbs, tinged with red. The tail, which is black, is much longer than the head and body: the hair is very long, and thinly dispersed. Mr. Buffon mentions a variety with a white throat. It is a native of Surinam and Brazil, is of a melancholy disposition, and appears as if it was always weeping; but is very fond of imitating anything that it sees done. These animals keep in large companies, and make a great chattering, especially in stormy weather.

#### The SAMIRI, or Orange MONKEY.

This is also one of the sapajou kind, or Monkeys that hold by the tail; and is the smallest and most beautiful of any of them. The hair of the body is short and fine, and of a yellow and brown colour; but, in its native country, of a brilliant gold colour. The feet are of a fine orange colour; the nails of the hands are flat; those of the feet like claws. The tail is very long, and the body of the size of a squirrel. It is a very tender, delicate animal, and held in high estimation. It is a native of Brazil and Guiana, and is seldom brought here alive.

#### The Horned MONKEY.

This animal is distinguished by two tufts of hair resembling horns on the top of the head. It has bright eyes, is of a dusky colour, and has ears resembling human ears. The body is about fourteen inches long, and the tail fifteen. It is an inhabitant of America, and is one of the sapajou kind.

#### The Antigua MONKEY.

This Monkey has a black face, and a short nose; the back and sides are orange colour and black; the belly white: the length of the body is eighteen inches; that of the tail is twenty inches. This animal was brought from Antigua, and was lately in the possession of Robert Morris, Esq; of the Navy-Office. It is good-natured, sprightly, and frolicsome.

#### The Fox-Tailed MONKEY.

Mr. Buffon calls this animal the faki, and he distinguishes it from those of the sapajou kind, or those Monkeys that hold by the tail, by the name of sagoins, which have feeble tails. It is remarkable for the length of the hair on its tail, and is therefore called the Fox-Tailed Monkey. The length of this animal, from the nose to the tail, is about eighteen inches; and the tail is longer. Its hands and feet are black, and it has claws instead of nails. It inhabits Guiana.

#### The Great-Eared MONKEY.

This is principally remarkable for its ears, which are very large, erect, naked, and almost square. The hair on the body and upper part of the limbs is sleek. The hands and feet are covered with light orange-coloured

hair, which is very fine and smooth. Its nails are long and crooked. The tail, which is twice the length of the body, is black, and the teeth are very white. It is a native of the hotter parts of South-America.

#### The WISTRI.

This animal is remarkable for having two very long full tufts of white hair standing out on each side upon its face, under the ears; and for its tail, which is full of hair, and annulated with ash-colour and black. The body is about seven inches long, and the tail eleven: the hands and feet are covered with short hair, and the fingers are like those of a squirrel. It has sharp claws. It is a native of Brazil, and feeds on vegetables and fish.

#### The MARIKINA.

The Marikina, or silky Monkey, is remarkable for having a mane round the neck, and a bunch of hair at the end of the tail, like a lion: the mane is generally of a bright bay-colour, though sometimes it is yellow. The hair on the body is long, fine, silky, glossy, and of a pale bright yellow. The face is flat, and of a dull purple colour. The ears are round and naked; the hands and feet are also naked, and of a dull purple colour. It has claws instead of nails to each finger: the length of the head and body is ten inches; the tail about thirteen inches. It is a native of Guiana.

#### The Little Lion MONKEY.

This is the pinche of Mr. Buffon, and has a face of a beautiful black, with white hair descending on each side of the face, like that of a man. The back and shoulders are covered with long and loose brown hair. The rump and half the tail are of a deep orange colour, inclining to red; and, on that account, it is called the red-tailed Monkey, by Mr. Pennant. The remaining part of the tail is black. The throat is black, and the breast, belly, and legs white. Its claws are sharp and crooked; its body eight inches long, and its tail sixteen. It has great agility and vivacity, and has a soft whistling note. It is a native of Guiana, Brazil, and the banks of the river of Amazons.

#### The MICO.

This is a most elegant and beautiful animal. The head is small and round, and the face and ears of the most lively vermilion colour. Mr. Condamine, to whom one of these animals was made a present of by the governor of Para, says, "the hair on its body was of a beautiful silver colour, brighter than that of the most venerable human hair; while the tail was of a deep brown, inclining to blackness." This description he tells you he made of it while it was alive; he also says that he kept it a year before it died, and afterwards preserved it in spirits of wine, to shew that he did not exaggerate in his description. Its body was eight inches long, and its tail twelve; and it was an inhabitant of the banks of the Amazons.

### NATURAL HISTORY of the MAUCAUCO.

THIS is a beautiful animal, about the size of a common cat; but the body and limbs are slenderer, and of a longer make. It has a tail double the length of its body, covered with fur, and alternately marked with broad rings of black and white. But what is principally remarked, is the largeness of its eyes, which are surrounded with a broad black space. The end of its nose is black, the face white, and the ears erect. The head is covered with dark ash-coloured hair; the back and sides with a red ash-colour; and all the hair is soft, glossy, and delicate, smooth to the touch, and erect like the pile of velvet. When it sleeps, it brings its nose to its belly, and its tail over its head. Its hinder-legs are much longer than those before. It is a native of Madagascar and the neighbouring islands. It is a gentle animal, and though it resembles the Monkey in many respects, it has neither its malice nor its mischief. Like the



the monkey; however, it seems to be perpetually in motion; and moves, like all four-handed animals, in an oblique direction. These animals are very cleanly, their cry is weak, and, when young, they are very easily tamed. In a wild state they go in troops of about thirty or forty.

#### The Mongooz.

The Mongooz, or Woolly Maucauco, is also a native of Madagascar. It is smaller than the former, and has a soft glossy thick fur, a little curled or waved; of a deep brownish ash-colour. The eyes are black, with orange-coloured circles round the pupil; and the tail, which is of one uniform colour, is very long. The breast and belly are white, and the hands and feet dusky and naked. All the nails are flat, except that on the inner-toe of the hind-feet. These animals are about the size of a cat, and are of various colours; sometimes they have white or yellow paws, and a face wholly brown or black. They sleep on trees, live on fruits, are very sportive, good-natured, and delicate. Their actions somewhat resemble those of a monkey.

#### The VARI, or Black MAUCAUCO.

This animal is larger than either of the former, and its hair is much longer. It may easily be distinguished from the rest, by the hair round the neck standing out like a ruff. It also differs in its disposition, which is fierce and savage, and it makes so loud a noise in the woods, that it is easy to mistake the noise of two for that of an hundred. The colour of the whole animal is generally black; though sometimes they are white, spotted with black; but the feet are black. This creature is also an inhabitant of Madagascar; and, though naturally fierce, is very gentle and inoffensive, when tamed.

#### The LORI.

The Lori, or Tail-less Maucauco is remarkable for the singularity of its figure. In proportion to its size, it is the longest of all other animals; having nine vertebrae in the loins, and other quadrupeds have only seven. It has no tail, which makes the body appear still longer. It resembles those of the maki kind in its hands, feet, and snout, and in the glossy qualities of its hair. It is a tame, harmless, little animal, and is about the size of a squirrel. It is a native of Ceylon and Bengal, where it lives in the woods, and feeds on fruits. It is fond of eggs, and will greedily devour small birds.

#### The Yellow MAUCAUCO.

This animal has a short dusky nose, small eyes, and short ears, which are broad, and placed at a great distance from each other. The head is flat and broad; and the legs and thighs short, and very thick. It has five toes to each foot, which are separated, and standing all forward. The hair is short, soft, and glossy; and the colour on the head, back, and sides, is yellow mixed with black. The cheeks, the inside of the legs, and the belly are yellow. The tail is of a bright tawny, mixed with black. The length of the body is about nineteen inches, and the tail seventeen. This animal is sportive and inoffensive. One of this kind was shewn in London, in 1768, which, if we may rely on the veracity of its keeper, came from the mountains of Jamaica.

#### The Flying MAUCAUCO.

It has a long head, a small mouth and teeth, and small round ears. From the neck to the hands, and from the hands to the hinder-feet, extends a broad skin, like that of a flying squirrel: the same skin is also continued from the hinder-feet to the extremity of the tail, which is included in it. The body and the outside of this skin is covered with soft hair, hoary, or black and ash-colour. The legs are cloathed with soft yellow down. It has five toes on each foot, and the claws are slender, sharp, and crooked, which enables it to adhere strongly to whatever it fastens on. This animal is about three feet long, and its tail, which is very slender,

is about a span long. It is a native of the Molucca isles, and Philippines, and feeds on the fruits of trees. It is a species very distinct from the bat, and flying squirrel.

#### The GERBUA.

To this class of animals we may also refer the Gerbua, which is a very extraordinary animal; it is sometimes called the Egyptian rat, or Pharaoh's rat. Its head is oblong; the crown of it convex, and the sides seem as it were swelled out. It has an oval body; its snout is short, large and obtuse; the opening of its mouth is small; its upper jaw is large, and composes the whole snout; the under jaw is very small, and hid in the upper one. It has two teeth before in each jaw, convex and sharp; its nostrils are at the end of the snout, broad, round, and near each other, being nearer the upper than the lower part of the snout. On these nostrils is a little round substance, somewhat raised, terminating at the bottom in two excrescences as strait as a line. Its whiskers are copious and in three rows; the first is at the lower edge of the snout; the hair is here very thick, soft, short, and white; the second row is near the nostrils, near the upper part of the snout; these are harsh, long, black, and few in number; the third row is betwixt the other two, towards the back part of the head, and consist of about ten hairs, which are very harsh, and very long, one of them exceeding the animal's whole body in length; they are black and white. Its two eyes are on the side of the head, and situated rather backward, and when compared to the body are large, prominent, and black. The ears are situated near the back part of the head; they are erect, of an oval form, broad at the top, naked, transparent, and the arteries in them are very distinctly seen. The fore feet which are called the hands, are near the neck, very short, round, naked, never touch the ground, and are so hid in the animal's fur, as to be scarcely visible: the toes are separated, small, and almost of equal length. The hind legs, which, comprehending the thighs, are three times as long as those before, and twice as long as the animal's whole body, are set close, and are naked. The thighs have no hair on them. The soles of the feet are long and thick; the toes are separate, close, and of equal length. The tail, which is of square form, and uniform size, is at least three times as long as the body, and is covered with very short harsh hair; at the end is a tuft of long soft hair, for about three inches in length. The body and head are covered with long soft thick hair. The upper part of the head and body of the animal, is of a pale brown to the middle of the sides; the other part, and the belly, are white. It has white hair in form of little circles, near the tail, which is of a pale brown colour, somewhat brighter than the body. Its ears and feet are of a flesh colour. This animal uses only his hind feet in walking; it frequently leaps in its motions. It rests on its hams, at which time its fore feet are not visible. With these forefeet it feeds itself like a squirrel, and the fingers or toes being crooked, it takes in water in them to drink. It sleeps all day, and is awake all night. It eats wheat, and a plant called Sefanus. It is not afraid of men, yet is not easily tamed, and must therefore be kept in a cage. It is a native of Egypt, and the mountains that separate Arabia from Egypt. Its Arabian name is Garbua, and it is about the size of a rat.

#### NATURAL HISTORY of the OPPOSSUM, and its KINDS.

TO the four-handed animals of the ancient continent, we may add the four-handed animals of the new, that use their hands like the former, as well as their tails, and that fill up the chasm between the monkey tribe and the lower orders of the forest. As the maki kind in some measure seem to unite the fox and the monkey in their figure and size, so these seem to unite the monkey and the rat. They are all less than the former; they have long tails, almost bare of hair; and



and their fur, as well as their shape, seems to place them near the rat kind. Some have accordingly ranked them in that class; but their being four-handed, is a sufficient reason for placing them in the rear of the monkeys.

The first and the most remarkable of this tribe is the Oppossum, an animal found both in North and South America, of the size of a small cat. The head resembles that of a fox; it has fifty teeth in all; but two great ones in the midst, like those of a rat. The eyes are little, round, clear, lively, and placed upright; the ears are long, broad, and transparent, like those of the rat kind; its tail also increases the similitude, being round, long, a little hairy in the beginning, but quite naked towards the end. The fore legs are short, being about three inches long; while those behind are about four. The feet are like hands, each having five toes or fingers, with white crooked nails, and rather longer behind than before. But it is particular in this animal, that the thumb on the hinder legs wants a nail; whereas the fingers are furnished with clawed nails as usual.

But that which distinguishes this animal from all others, and what has excited the wonder of mankind for more than two centuries, is the extraordinary conformation of its belly, as it is found to have a false womb, into which the young, when brought forth in the usual manner, creep and continue for some days longer, to lodge and suckle securely. This bag, if we may so call it, being one of the most extraordinary things in natural history, requires a more minute description. Under the belly of the female is a kind of slit or opening, of about three inches long; this opening is composed of a skin, which makes a bag internally, which is covered on the inside with hair, and in this bag, are the teats of the female; and into it the young, when brought forth, retire, either to suckle or to escape from danger. This bag has a power of opening and shutting, at the will of the animal; and this is performed by means of several muscles, and two bones, that are fitted for this purpose, and that are peculiar to this animal only. These two bones are placed before the os pubis, to which they are joined at the base; they are about two inches long, and grow smaller and smaller to their extremities. These support the muscles that serve to open the bag, and give them a fixture. To these muscles there are antagonists, that serve, in the same manner, to shut the bag; and this they perform so exactly, that in the living animal the opening can scarce be discerned, except when the sides are forcibly drawn asunder. The inside of this bag is furnished with glands, that exude a musky substance, which communicates to the flesh of the animal, and renders it unfit to be eaten. It is not to be supposed that this is the place where the young are conceived, as some have been led to imagine; for the Oppossum has another womb, like that of the generality of animals, in which generation is performed in the ordinary manner. The bag we have been describing, may rather be considered as a supplemental womb. In the real womb, the little animal is partly brought to perfection; in the ordinary one, it receives a kind of additional incubation; and acquires, at last, strength enough to follow the dam wherever she goes. We have many reasons to suppose that the young of this animal are all brought forth prematurely, or before they have acquired that degree of perfection, which is common in other quadrupeds. The little ones, when first produced, are in a manner but half completed; and some travellers assert, that they are, at that time, not much larger than flies. We are assured also, that immediately on quitting the real womb, they creep into the false one; where they continue fixed to the teat, until they have strength sufficient to venture once more into the open air, and share the fatigues of the parent. Ulloa assures us, that he has found five of these little creatures hidden in the belly of the dam three days after she was dead, still alive, and all clinging to the teat with great avidity. It is probable, therefore, that upon their first entering the false womb, they seldom stir out from thence; but when more advanced, they venture forth several times in the day;

and, at last, seldom make use of their retreat, except in cases of necessity or danger. Travellers are not agreed in their accounts of the time which these animals take to continue in the false womb; some assure us, they remain there for several weeks; and others, more precisely mention a month. During this period of strange gestation, there is no difficulty in opening the bag in which they are concealed; they may be reckoned, examined, and handled, without much inconvenience; for they keep fixed to the teat, and cling there as firm as if they made a part of the body of the animal that bears them. When they are grown stronger, they drop from the teat into the bag in which they are contained; and, at last, find their way out, in search of more copious subsistence. Still, however, the false belly serves them for a retreat; either when they want to sleep or suckle, or when they are pursued by an enemy. The dam, on such occasions, opens her bag to receive them, which they enter.

The Oppossum, when on the ground, is a slow helpless animal; the formation of its hands, are alone sufficient to shew its incapacity of running with any degree of swiftness: but, to counterbalance this inconvenience, it climbs trees with great ease and expedition. It chiefly subsists upon birds; and hides among the leaves of the trees, to seize them by surprise. It often also hangs by the tail, which is long and muscular; and, in this situation, for hours together, with the head downwards, it keeps watching for its prey. If any lesser animal, which it is able to overcome, passes underneath, it drops upon it with deadly aim, and quickly devours it. By means of its tail, the Oppossum also flings from one tree to another, hunts insects, escapes its pursuers, and provides for its safety. It seems to be a creature that lives upon vegetables, as well as animal substances, roots, sugar-canes, the bark, and even the leaves of trees. It is easily tamed, but it is a disagreeable domestic, as well from its stupidity and figure, as its scent, which, however fragrant in small quantities, fails not to be ungrateful when copiously supplied.

An animal greatly resembling the former, is the Marmose, which is found in the same continent. It seems only to differ in size, being less; and, instead of a bag to receive its young, has only two longitudinal folds near the thighs, within which, the young, which are prematurely brought forth, as in the last instance, continue to suckle. The young of these, when first produced, are not above the size of a bean; but continue sticking to the teat, until they have arrived at greater maturity.

The Cayopolin is somewhat larger than the former; and a good deal resembling it in habits and figure, except that its snout is more pointed, its tail longer in proportion, and its colour different, being of an ash, somewhat inclining to yellow; however, I should suppose it to be only a variety of the former.

To this number we may add the Phalanger, so called by Mr. Buffon; a good deal resembling the former, but distinguished by the fashion of its hinder hands: the thumb and the fore finger being joined together, except at the extremities. This animal is about the size of a rat; and has, accordingly, by some, been called the Rat of Surinam.

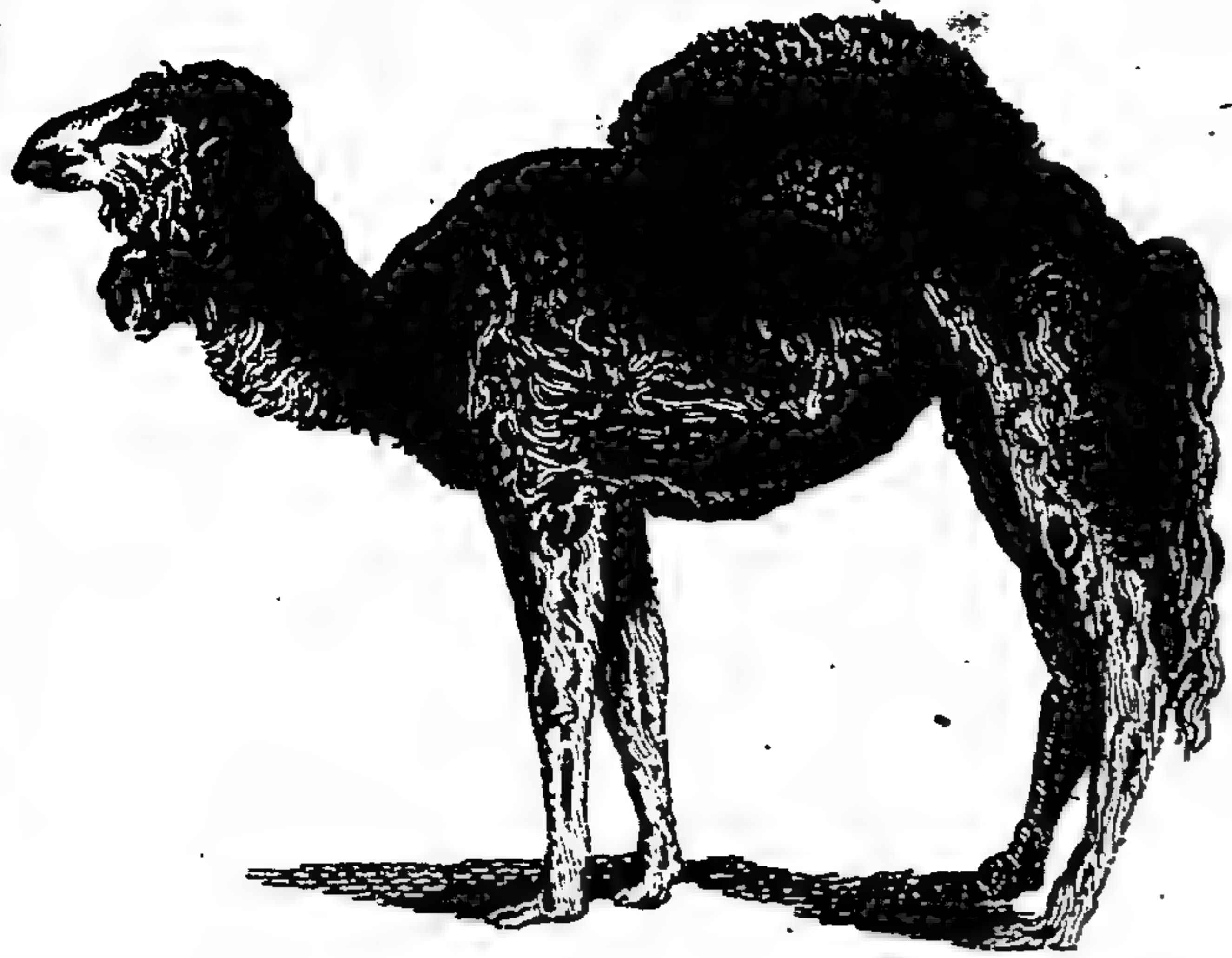
The last animal of this class is called, by Mr. Buffon, the Tarsier. This extraordinary little animal resembles the former, in having four hands, and a long tail; but it differs very much in the extreme length of its hinder legs, which are longer than the rest of its whole body. The bones of that part of the foot called the tarsus, are likewise so very long, that from thence the animal has received its name: the tail is naked in the middle, and hairy only at both extremities: its hair is woolly, soft, and a deep ash colour. As to the rest, it is unknown from what country this animal was brought; but the naturalist from whom we have its description, supposes it to be a native of America.

From this general description of four-handed animals, we perceive what few advantages the brute creation derive from those organs that, in man, are employed to so many great and useful purposes. The being able to pluck their food from the trees, the capacity



# QUADRUPEDS

THE DROMEDARY



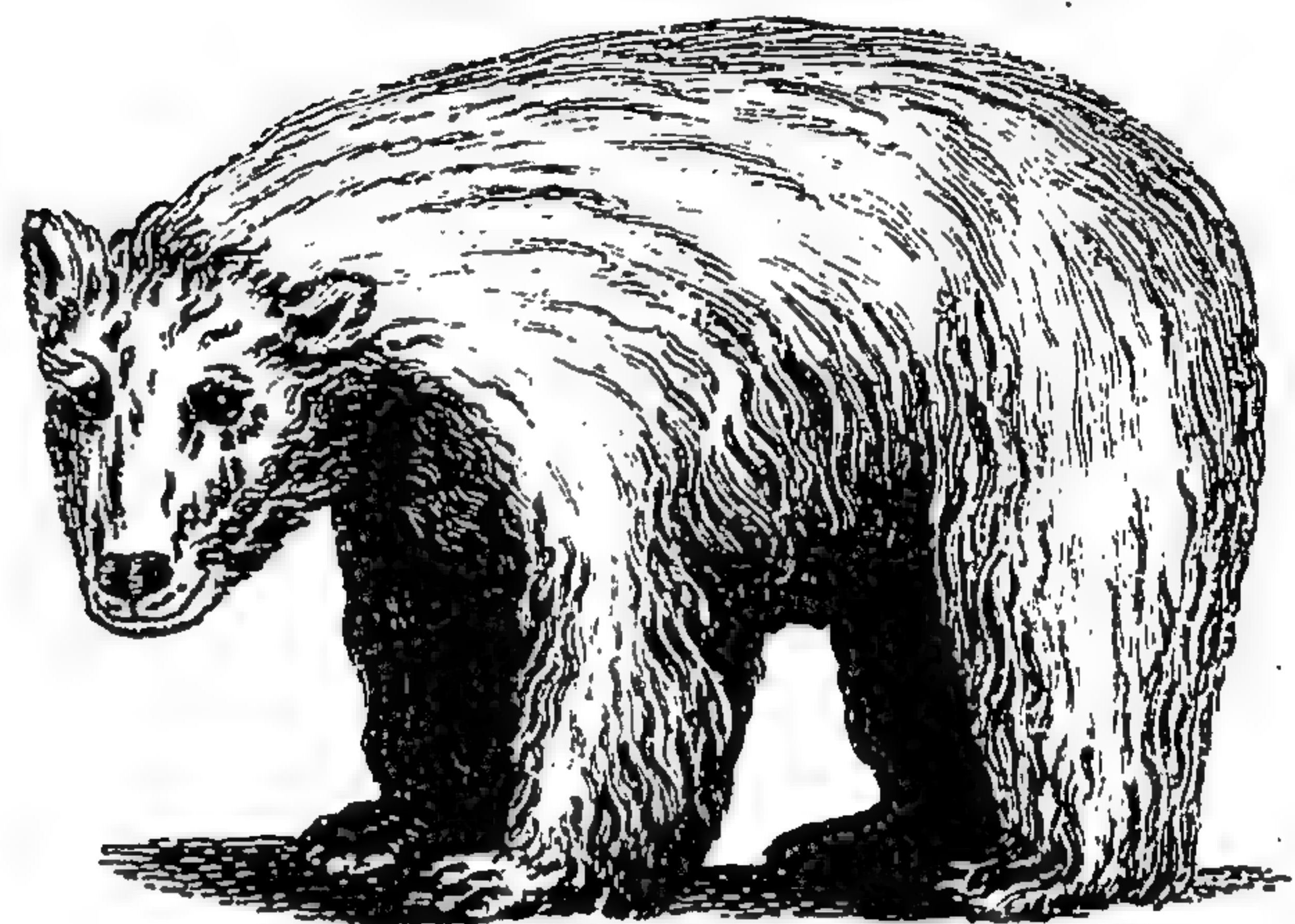
THE ELEPHANT



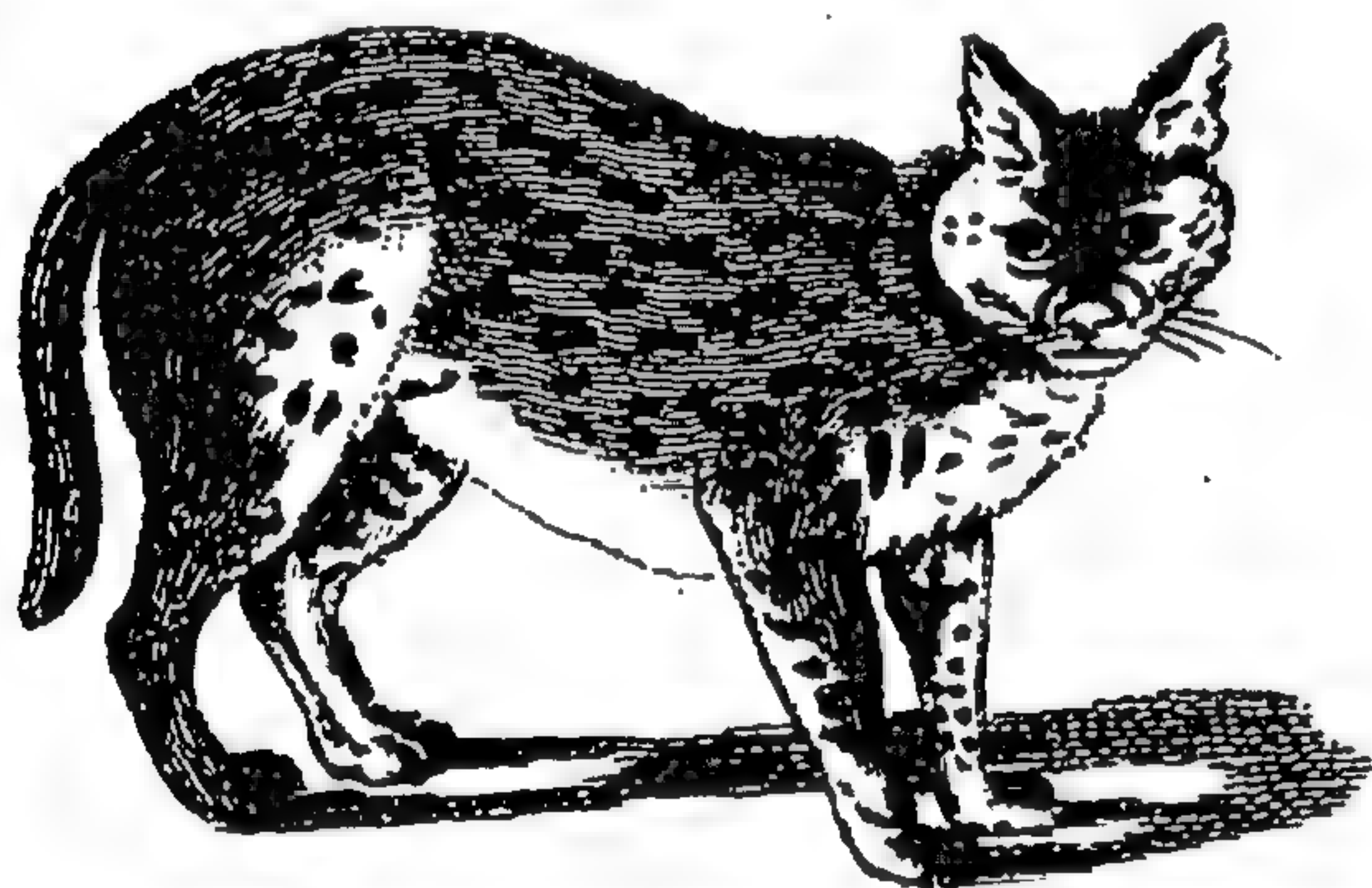
THE BROWN BEAR



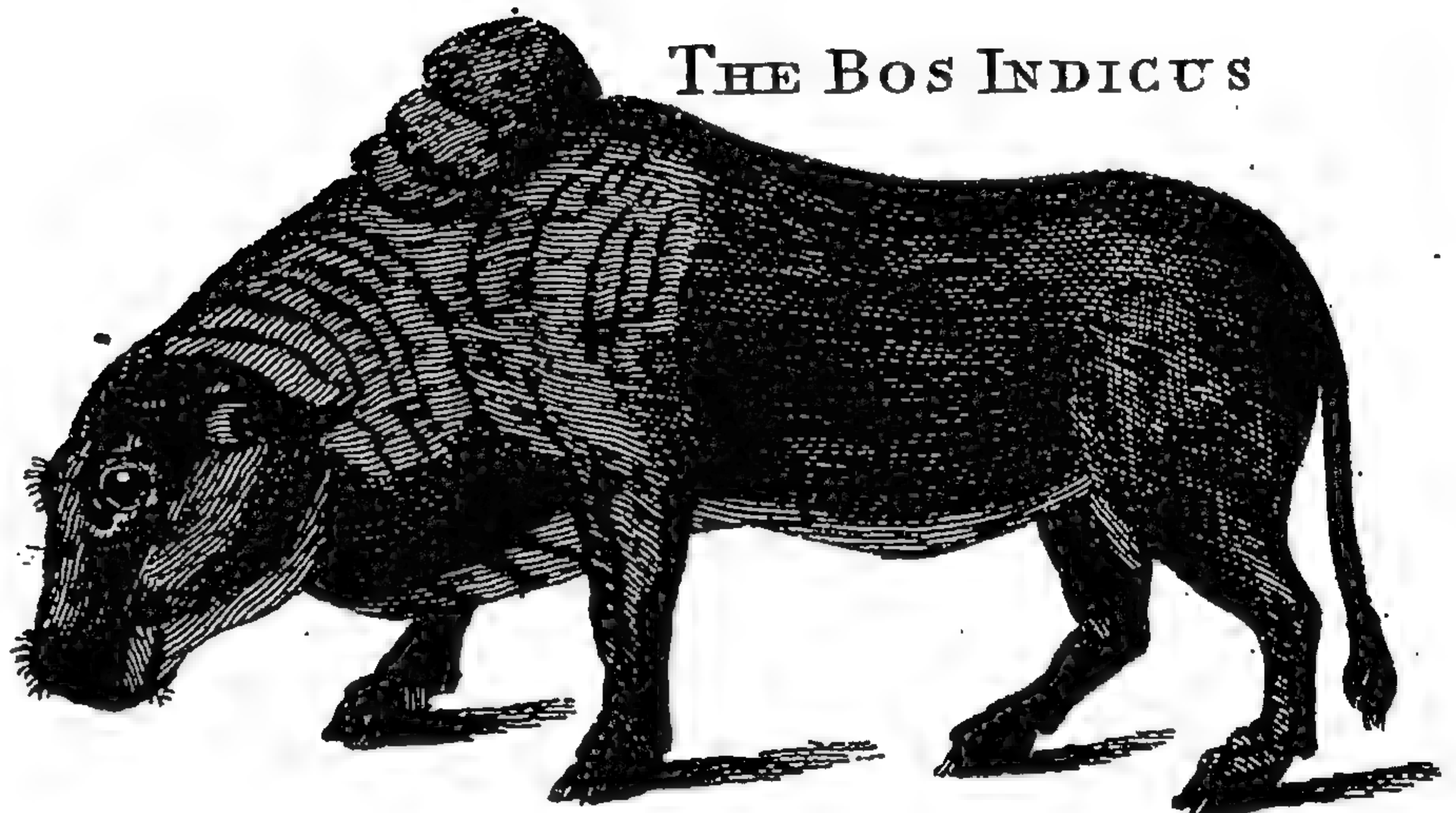
THE WHITE BEAR



THE CATUS PARDUS



THE BOS INDICUS



THE GIRAFFE

THE CHAMOIS



THE ERMINE





city of clinging among the branches, or at most of converting one of those branches into a weapon of offence, are the highest stretches of their sagacity, and the only use their hands have hitherto been employed in; and yet, some superficial men have asserted, that the hands alone are sufficient to vindicate the dominion of mankind over other animals; and that much of his boasted reason, is nothing more than the result of his happier conformation: however, were this so, an ape or a monkey would in some instances be more rational than we; their fingers are smaller, and, in some of them, more finely formed than ours. To what a variety of purposes might they not be employed, if their powers were properly exerted! Those works which we, from the largeness of our fingers, are obliged to go clumsily about, one of these could very easily perform with the utmost exactness; and if the fineness of the hand assisted reason, an ape would be one of the most reasonable beings in the creation. But these admirably formed machines, are almost useless both to mankind and themselves; and contribute little more to the happiness of animal life, than the paws of the lowest quadruped. They are

supplied, indeed, with the organs; but they want the mind, to put them into action: it is that reasoning principle alone, with which man has been endowed, that can adapt seemingly opposite causes, to concur in the same general design; and even where the organs are deficient, that can supply their place, by the intervention of assisting instruments. Where reason prevails, we find that it scarcely matters what the organs are that give it the direction; the being furnished with that principle, still goes forward, steadily and uniformly successful; breaks through every obstacle, and becomes master of every enterprize. A man has been known, without hands or legs, to convert, by practice, his very stumps to the most convenient purposes; and with these clumsy instruments, perform the most astonishing feats of dexterity. We may therefore conclude, that it is the mind alone that gives a master to the creation; and that if a bear or a horse were endowed with the same intellects that have been given to man, the hardness of an hoof, or the awkwardness of a paw, would be no obstacle to their advancement in the arts of dominion or of social felicity.

## C H A P. VII.

### The NATURAL HISTORY of QUADRUPEDS of the CAMEL Kind.

*Containing a descriptive Account of the TURKMAN CAMEL; the ARABIAN; the DROMEDARY; the BACTRIAN; the LLAMA, &c.*

#### NATURAL HISTORY of the TURKMAN CAMEL.

**I**N Europe and Asia there are four sorts of Camels; one of which is called the Turkman Camel, that is much the strongest and largest, and is more woolly or hairy, and of a darker colour than any of the rest. Their common load is eight hundred pounds; but it sometimes carries much more. This animal cannot bear heat, and therefore they never set it to work in June, July, and August.

#### The ARABIAN CAMEL.

This is much smaller than the former, of a lighter colour, and not so full of hair, and its burden is above five hundred pounds weight. This can bear heat and thirst much better than the Turkman; nor is there any need that the Arabian Camel be fed with barley, flour, and straw; for the shrubs that grow in the deserts of Arabia, are almost all the food that it requires, which it eats as it goes along. There has been an instance of their travelling without water for fifteen days; but they drank such a quantity as soon as they came to a pond, that it proved fatal to many of them.

#### The DROMEDARY.

The Dromedary is lighter, and of a more handsome make than the former; and instead of the solemn walk to which the others are accustomed, it will travel about one hundred miles in one day. The Dromedary is five feet and a half high to the top of the bunch, and four feet and a half from the breast to the tail; and this latter including the hair, is two feet and a half long. The neck also is two feet and a half, and the head twenty-one inches from the hind part to the muzzle. The hair is of a fallow colour inclining to ash, and very soft. Under the belly it is no longer than that of an ox; but its length is much greater on the head, under the throat, and on the top of the breast, where it is five or six inches; but the longest of all is on the middle of the back where it is a foot in length. In this place though it is very soft, yet it keeps upright, insomuch, that it makes a great part of the bunch on the back; for when it is kept down by the hand, the back does not seem to rise higher than that of a hog. Perhaps for this

reason, some authors have affirmed, that a Dromedary is generated between a Camel and a Hog.

#### The BACTRIAN CAMEL.

The Camel with two bunches on its back, is by Linæus called the Bactrian Camel, and the only distinction between this and the Arabian Camel, seems to consist therein; some, but very improperly, give the name of a Dromedary to the Bactrian Camel, though it is not so swift of foot as the real Dromedary, which has received its name upon that account.

The Camels of China have two bunches covered with long hair, but they are no larger than a common horse; likewise the neck is shorter and thicker than that of a common Camel. The hair is thick, and as long as that of goats, being sometimes of a brownish yellow colour, and sometimes reddish with a mixture of black; likewise the legs are not so long or so slender in proportion, as those of the common Camel, for which reason this is much fitter to carry burdens. The Arabian Camel has hair of a different nature; for it is curled, and generally longer over all the body than the former, though shorter on the bunch, which is vastly more fleshy. They shed their coat every year except the hair on the bunch, which is generally longer than that on the rest of the body. The hair on the tail is different from that on other parts, for it is grey and very coarse, and exactly resembles that on a horse's tail.

The head of both these animals is small in proportion to the body; the muzzle is cloven like that of a hare, and they have very short ears. The Camel has three dog teeth on each side of the upper jaw, and two on each side the lower. The Dromedary has teeth like those of ruminating animals, for it has no dog teeth nor nippers on the upper jaw before. The feet, which are cloven, are only armed with two small nails at the end; for the under part, which is flat, broad, and fleshy, is only covered with a soft, thick, and somewhat callous skin; but it is very fit for sandy countries, such as the deserts of Asia and Africa. The callosities on the joints of the legs are six in number, namely, two on each fore leg, and one on the upper joint of the hind legs, which is properly speaking in the knee. Besides these there is a seventh more large than the former at the bottom of the



the breast, strongly attached to the breast bone, which has an eminence in this place. It is eight inches long, six broad, and two thick. The stomach is very large, and divided into four, as in other ruminating animals. They are only distinguished from each other by a sort of short necks of a lesser diameter, inasmuch that the first stomach, which is exceeding large, is succeeded by another much less; the third is also less than the first, but much longer; and the fourth is like the second. All the intestines together are one hundred and six feet long in the camel; and in the dromedary shorter in proportion. The colon is sixty-six feet long, and its capacity is two inches in diameter at the beginning. The pizzle, of which they make strings for bows, is nineteen inches long, and hooked at the end. The bunches are not formed by the rising of the spine of the back, but consist of white fat almost like suet. The spleen lies over the left kidney, and is nine inches long, four broad, and half an inch thick. The lungs have only a single lobe on each side, and the heart is nine inches long, seven broad, and pointed at the end. The structure of the tongue is pretty remarkable, because contrary to all other tongues. One half of it near the root, which is very thick, has a small round space as a center among several eminences that cover this part, all whose points turn from the center, and appear to be rough when the fingers are drawn towards the center. Among these there are two rows placed in a right line, five in each row, that are like navels, and formed by round folds of a very delicate structure.

The brain, comprehending the cerebellum, is but six inches and a half long, and four broad; and the optic nerve is pierced according to its length with many holes full of blood. The mammillary processes are very large and hollow, having each two ducts; and the pineal gland is of the size of a hazel nut, and composed of three other glands, with a cavity in the middle.

In 1752 there were two of these animals shewn at Orleans in France, one of which was called a dromedary, and was fourteen years old. The other was a female camel of three years of age. The dromedary was six feet high without the two bunches, and ten feet long. There were four nostrils at the end of the muzzle, two of which were very large and wide: but the two others were much smaller, and served for breathing. The eyes were large and prominent, and the fore part of the head was a little hollowed in the middle. The forehead was broad, and covered with tufted hair resembling wool. The ears were short and round, and the neck long; it was adorned with very long brown hair, especially underneath. The knees were large, and the feet were considerably cloven on the upper part, though but very little below, where they were shaped like a heart. On the breast was a broad callosity, on which this animal leaned when at rest; there were two large bunches on the back, so placed that a man might conveniently sit between them. The buttocks were narrow, and the hind legs very high and slender; the hind feet were cloven, and long like those of an ox; the tail was short, and had but little hair, except at the end. The upper lip was cloven, just like that of a hare; and there were no teeth before in the upper jaw: but there were two large teeth on each side about the middle, of which the hindmost was longest, and bent back like the tusk of a boar. It is said they are sometimes obliged to saw these off: farther in the same jaw there was a black stump.

The lower jaw was well furnished with teeth like those of a horse, and the tongue was likewise like that of the same animal; but the palate was as rough as that of an ass. The penis was no thicker than a quill, but it was very long, and bent backwards; and consequently the urine was voided the same way. The testicles were placed behind like those of a boar. The rutting time begins about the fifteenth of January, and then they are very large: but at other times they are scarcely to be perceived. This continues two or three months, and then he makes a terrible noise like the bellowing of a bull; he loses his appetite, becomes extremely lean, and at length all the hair falls off; but this time being over, he soon recovers, and will eat hay, wheat, straw, barley, and oats; but when his stomach is not

good he is fondest of thistles. He drinks but seldom; however, when he does it is several quarts at a time. He generally eats twenty or thirty pounds of hay in a day. He takes long strides when he walks, and can travel eighty or ninety miles in a day. He often trots, but gallops seldom or never; he can carry fifteen hundred weight very easily, and much more if he be obliged to it. This animal is by most mistaken for a dromedary, but is certainly a Bactrian camel.

The female camel of three years old was not half so tall, though the head was very much like that of the former; all the hair was brownish and longer, especially on the back, where there was a single bunch that reached from the shoulders almost to the tail. The nostrils were not so wide, but she had double teeth as well above as below. The udder was placed between the hind legs; and the vulva resembled that of a bitch.

In the year following, at the fair of St. Germain, there was a young camel seen that was just brought into the world: by which means it came to be known how long they go with young, which is exactly a year; however it lived but three days; this perhaps was owing to the coldness of the climate.

In Egypt they make use of camel's milk in various diseases, and with good success; particularly in the dropsy, jaundice, and obstructions of the lower belly. The fat is emollient and resolvent, and is good to ease the pains of the piles. The gall mixed with an equal part of honey, is an excellent liniment against the quinsy.

There is another sort of camel in South America, called by some writers a camel sheep. They are of two sorts, one of which the natives call llamas, and the other vicunaes, or guanacoes. The former is used to carry burthens of fifty or sixty pounds weight, and before the Spaniards introduced horses and mules they had no other beast of carriage. This animal is very common in Peru; but the vicuna or guanaco is an inhabitant of the more southern parts, and yields by much the finest wool. Sir John Narborough in his voyage to the South Sea found a guanaco that was dead, and yet entire and uncorrupted. He had pretty long wool on his back, and down the sides, of the colour of dried rose leaves, but his belly was covered with white wool. He had somewhat the shape of a deer, and was as large as a small colt, with a long neck, and his head, mouth, and ears were like those of a sheep. His legs were very long, and he was cloven footed like a deer, with a short bushy tail of a reddish colour. They herd together in companies of ten, thirty, or forty together; but they are so shy that it is a difficult matter to come near enough to shoot them: for when any one attempts it they neigh like young horses and then run away.

Many writers have no other name for the guanaco but pacos, and it has a greater resemblance to a sheep on account of its having a greater quantity of fine wool above mentioned than a llama. This wool is so extremely fine and bright that it nearly resembles silk, and it is used to make fine stuffs of several kinds. It is certainly of a different species from the llama, because it is much more weak and unfit to carry burthens; neither has it any bunch on its breast. Some travellers affirm, that it has more wool on its neck and head only, than one of our sheep has on its whole body. The flesh is well tasted, sweet, and pleasant, and it is greatly covered upon that account, as well as for the sake of the wool.

#### The LLAMA.

The Llama is six feet in length from the neck to the tail, and four in height. The head, neck, mouth, cleft of the upper lip and pizzle, are like those of a camel. It has no fore teeth in the upper jaw, and it is a ruminating animal without horns. It is cloven footed with sharp toes, and the foot is solid at the bottom. Between the breast and belly there is a sort of bunch, from which some sort of matter often drops. It is a mild gentle creature, but impatient of cold. When it is injured by its driver, it throws a liquor from its mouth, which, as some say, falling upon the naked skin corrodes it, and makes it rise in blisters.



## C H A P. VIII.

## The NATURAL HISTORY of QUADRUPEDS of the DOG Kind.

*Containing a particular Description of the DOG, and its numerous Varieties; the WOLF; the FOX; the JACKALL; the ISATIS; the HYÆNA, &c.*

**T**HIS class of animals may be principally distinguished by their claws, which have no sheath, like those of the cat kind; by their having six cutting-teeth, and two canine in each jaw: also by their having five toes before, and four behind. But, though this is invariable in the wild species, such as the wolf, &c. the common dogs have frequently five toes on each foot. The tail of those of the dog kind bends towards the left, a character common to the whole species, and first discovered by Linnæus.

## NATURAL HISTORY of the DOG.

**T**HE Dog is the most intelligent of all known quadrupeds, and the acknowledged friend of mankind. It seems beyond the power of ill usage to subdue the faithful and constant quality inherent in him. The Dog, exclusive of the beauty of his form, his swiftness, and his vivacity, possesses all those internal qualifications that can endear himself to man. In his domestic state, his sole ambition is the desire to please. With a kind of affectionate humility, he crouches before his master, and is happy to offer his strength, his courage, and all his useful talents, for his service. He waits his orders, and implicitly obeys them: he consults his looks, and perfectly understands them. He is friendly, without interest, grateful for the slightest favours, and sooner forgets injuries than benefits. His only aim is to be serviceable; his only terror to displease. He licks the hand just raised to strike him, and disarms resentment by submission. Ever assiduous in serving his master, he is also a friend to his friends, and indifferent to all the rest.

History, says Mr. Pope, is more full of examples of the fidelity of dogs than of friends. Homer's account of Ulysses's dog Argus, is the most pathetic imaginable, all the circumstances considered, and an excellent proof of the old bard's good-nature. Ulysses had left him at Ithaca, when he embarked for Troy, and found him at his return after twenty years. Mr. Pope thus describes it in verse.

“When wise Ulysses from his native coast  
Long kept by wars, and long by tempests tost,  
Arriv'd at last, poor, old, disguis'd, alone,  
To all his friends, and ev'n his queen unknown;  
Chang'd as he was, with age, and toils, and cares,  
Furrow'd his rev'rend face, and white his hairs,  
In his own palace forc'd to ask his bread,  
Scorn'd by those slaves his former bounty fed;  
Forgot of all his own domestic crew,  
The faithful dog alone his rightful master knew—  
Unfed, unhous'd, neglected on the clay,  
Like an old servant now cashier'd he lay:  
Touch'd with resentment of ungrateful man,  
And longing to behold his ancient lord again,  
Him when he saw—he rose and crawl'd to meet  
('Twas all he cou'd) and fawn'd, and kiss'd his feet,  
Seiz'd with dumb joy—then falling by his side,  
Own'd his returning lord, look'd up, and dy'd!”

Plutarch, relating how the Athenians were obliged to abandon Athens in the time of Themistocles, steps back again out of the way of his history, purely to describe the lamentable cries and howlings of the poor dogs they left behind. He makes mention of one, that followed his master across the sea to Salamis, where he died, and was honoured with a tomb by the Athenians,

No. 7.

who gave the name of the Dog's-Grave, to that part of the island where he was buried. This respect to a dog, in the most polite people of the world is very observable.

The dog is of great importance to us; when at night the guard of the house is committed to his care, he seems proud of the charge; he continues a watchful sentinel, goes his rounds, scents strangers at a distance, and warns them of his being upon duty. This animal also, excited by his friendship for mankind, exerts a degree of superiority over all animals that require human protection. His voice is more readily obeyed by the flock and the herd, than even that of the shepherd and the herdsman. He conducts them, and defends them from danger, and considers their enemies as his own.

Multitudes of dogs are found wild, or rather without masters, in Congo, Lower Ethiopia, and towards the Cape of Good-Hope: they are red-haired, have slender bodies, and turned-up tails, like greyhounds: others are found that resemble hounds. They go in great packs, and attack lions, tigers, and elephants, but are frequently killed by them. There are great numbers of wild dogs in South-America, which are derived from the European race; for the dog was unknown in America before it was introduced there by the Europeans. They breed in holes, like rabbit-holes; and, when they are found young, will instantly attach themselves to mankind, nor will they afterwards desert their masters, or ever join themselves to the wild dogs again. These are very vigilant, and excellent in the chase.

The dog is the only animal whose fidelity is unshaken; almost the only one who knows his name, and answers to the domestic call; the only one that, when he misses his master, expresses his loss by his complaints; and almost the only one who can readily find his way home, after he has been carried to a distant place.

Of all animals the dog is the most susceptible of change in its form; the varieties of this animal being too many for even the most careful describer to mention: each will mix with the other, and produce varieties still more unlike the original stock. The climate, the food, and the education, make strong impressions upon this animal, and produce alterations in its shape, colour, hair, and size; and in every thing but its nature. The same dog carried from one climate to another, seems to become another animal; and different breeds appear to be as much separated as any two animals the most distinct in nature. In short, they are different in every thing but the internal conformation of their parts; it is that which distinguishes the species, and keeps the animal distinct from all others. It is indeed the peculiar conformation of the parts, and the power of producing an animal that can reproduce, that marks the kind, and approximates forms that do not seem made for each other. We may therefore venture to pronounce all dogs to be of one kind; but which of them is the original, from whence such a variety of descendants have sprung, is not easily to be determined. Mr. Buffon makes the chien de berger, the shepherd's dog, or what is sometimes called le-chien-loup, or wolf-dog, the original of all; it being naturally the most sensible; and becomes, without discipline, almost instantly the guardian of the flocks, and keeps them within bounds; reducing the stragglers to their proper limits, and defending them from the attacks of the wolves. We have this variety in England, but it is

both



both small and weak. Those of France, and the Alps, are much stronger and larger. They are sharp-nosed and sharp-eared, are very hairy, especially about the neck, and have their tails turned up or curled.

Upon comparing other animals with the dog internally, the wolf and the fox appear to have the most perfect resemblance; it is probable, therefore, that the dog which most nearly resembles those, is the original animal of its kind. Hence Mr. Buffon is of opinion, that, as the shepherd's-dog is of all animals of this kind the most like the wolf or the fox, it must certainly be the primitive animal. The dogs that have run wild in America, and in Congo, approach this form. Those of Siberia, Lapland, Iceland, the Cape of Good-Hope, Madagascar, Madura, Calicut, and Malabar, have all pricked ears, and a long nose, and nearly resemble the shepherd's dog. Many of these dogs are also to be found in the temperate climates, particularly among those, who, preferring usefulness to beauty, employ an animal that does not require much instruction to be serviceable. The shepherd's-dog may therefore be considered as the primitive stock from whence these varieties are all derived: he is the stem of that genealogical tree, which has been branched out into every part of the world.

Among the Turks, dogs are never admitted into their houses, though they provide for them and supply them with meat. They will not destroy them, because they feed upon dead carcases and carrion, which may happen to lie exposed to the air, and by that means prevent its being infectious. There is indeed scarce any thing so nasty, that a dog refuses to eat; for a piece of stinking dead horse is as great a delicacy to him, as an artichoke to an epicure. When flesh is not to be obtained, the dog will feed upon many things of the vegetable kind, though he is always much sonder of the former.

A dog has the most exquisite nose of any animal, for he will distinguish his master by the smell among ten thousand people; and by this means he can pursue his footsteps though it be a considerable time after he has passed. The nearer a dog approaches the game, the louder he barks, with intent perhaps to terrify the animal pursued, and make it slacken its pace.

In some parts of Siberia, they make use of dogs as they do of horses, and train them up to draw carriages from one inn to another.

When his master is attacked, the dog will defend him to the utmost of his power; and when his master dies, he seems to lament his loss; and some have been known to pine away, and die with grief upon these occasions.

When first whelped, the dog is not a completely finished animal. In those which bring forth many at a time, the young are not so perfect as in those which bring but one or two. In general their eyes are not opened till they are ten or twelve days old, during which time the bones of the skull are not completed, the body is puffed up, the nose is short, and the whole body but indifferently sketched out. In less than a month the puppy begins to exercise all its senses, and from thence makes hasty advances to its perfection. This animal is capable of reproducing at the age of twelve months; it goes nine weeks with young, and lives to about the age of twelve years.

When a dog has committed a theft, he flinks away with his tail between his legs. He can hardly ever be said to sweat; but, when hot, he foams, and hangs out his tongue. Before he lies down, he goes several times round the spot; and his sleep is attended with a quick sense of hearing: it is also certain that he frequently dreams.

Water appears to be more necessary to the dog than food; he drinks frequently, though not abundantly, and it is imagined he runs mad when abridged of water. This dreadful malady is the greatest inconvenience that results from the keeping this faithful domestic: but it is a disorder not so frequent as the terrors of the timorous would suppose; and the dog has been frequently accused of madness without a fair trial.

The Dog was consecrated to Mercury, as the most

vigilant and crafty of all the gods; because watchfulness and sagacity are the properties of that animal. The flesh of young dogs was reckoned so pure, that it was offered in sacrifice to the gods, according to Pliny; and the flesh of dogs was served up in repasts prepared for the gods. These animals were held in great veneration by the Egyptians; but their respect diminished greatly, when after Cambyfes had killed Apis, and caused him to be thrown into the lay-stall, the Dog alone, of all animals, went to feed on his carcase. The Romans crucified one every year, as a punishment, because the Dogs had not warned them by barking, of the arrival of the Gauls, who besieged the capitol. There was a country in Æthiopia, says Ælian, whose inhabitants had a Dog for their king; and they received his caresses or barkings as tokens of his favour or anger. Round the temple dedicated to Vulcan upon mount Ætna, there are sacred Dogs, says the same writer, who, as if they were endued with reason, fawn upon those that approach the temple with modesty and devotion; but they bite and devour those whose hands are unclean, and drive away men and women who come to rendezvous there.

The use of this animal in medicine has been formerly very great, and in some parts of Europe they still make an oil or balsam of whelps which is kept in the shops. It is recommended against weakness of the nerves, palsy, and rickets. The fat of a Dog is said to be vulnerary, healing and deterfive, and is used by some both inwardly and outwardly. Some would have it to be good taken inwardly against the consumption and epilepsy. The dose is from a scruple to a drachm and a half. Album Græcum, or Dogs dung, when become white by being exposed to the weather, is said to be detergent, attenuant, and resolvent; and was formerly made use of against quinies, pleurifies, and cholicks; the dose is from half a scruple to a drachm and a half. It is said also to promote sweat, and to restore a due circulation of the blood; but it is now entirely neglected. Many ladies are fond of gloves made of Dog's skin, because they are supposed to be emollient, and to render their arms and hands more soft; but then they wear them chiefly in the night.

#### The Shepherd's Dog.

The Shepherd's Dog, when transported into the temperate climates, and among civilized people, such as England, France, and Germany, will be divested of his savage air, his pricked ears, his rough, long, and thick hair; and merely from the influence of climate and food, become a *matin*, a *mistiff*, or an *hound*. These three seem to be the immediate descendants of the Shepherd's Dog; and from them the other varieties are produced. This is the *canus domesticus* of Ray.

#### The HOUND.

The Hound is an animal well known for its use in hunting. There are three sorts, though all produced by the same dam, viz. the Hound, the Harrier, and the Beagle. The ears are long and pendulous, the nose blunt, the mouth large, and their barking or opening, loud and deep. This animal, when transported into Spain or Barbary, where the hair of all quadrupeds becomes soft and long, will be converted into the *land-spaniel*, and the *water-spaniel*; and those of different sizes.

#### The SPANIEL.

From the name it may be supposed that we are indebted to Spain for this breed. These animals vary in size, from the *Setting-Dog* to the *Springing Spaniels*, and some of the little *Lap-Dogs*. This kingdom has long been remarkable for producing excellent Dogs of this sort; great care having been taken to preserve the breed in the utmost purity. They are still distinguished by the name of *English Spaniels*; and, notwithstanding the derivation of the name, it is probable they are natives of Great-Britain. The *Pointer*, which is a Dog of foreign extraction, was unknown to our ancestors. The *Finder* was another species used in fowling; and was the same as our *Water-Spaniel*.

The



The GREYHOUND.

The Greyhound, or Grehound is the swiftest of all Dogs, and pursues a hare by the sight, and not by the smell. Its head and legs are long; and the body is so exceedingly slender, that it appears to be peculiarly adapted to running swiftly. It was formerly esteemed the first in rank among Dogs, as appears from the forest laws of king Canute, who enacted that no person under the degree of a gentleman, should presume to keep a Greyhound. Its varieties are the Spanish Greyhound, which is small and smooth; and the Oriental Greyhound, which is tall and slender; with very pendulous ears, and long hair on the tail.

The Irish GREYHOUND.

This animal, which is also called the great Irish Wolf-Dog, is very rare, even in the only country in the world where it is to be found. It is kept rather for shew than use, there being no longer any wolves in Ireland. This animal is extremely beautiful and majestic, and the largest of the Dog kind to be seen in the world. Mr. Buffon supposes these are the true Molossian Dogs of the antients; but does not give his reasons for such a supposition. If these animals are carried into other countries, they soon degenerate; and, even at home, they quickly alter except great care is taken to prevent it. Formerly they were employed in clearing the island of wolves, which greatly infested it: but these being destroyed, the Dogs also are wearing away; as if nature intended to blot out the species, when they had no further services to perform.

The Danish Dog.

This is also a large Dog, and is more slender than the mastiff, which he resembles, except that his head is slenderer and longer. The colour of these animals is generally of a yellowish brown, though some of them are grey, and others quite black. They carry their tails turned up, and have a large high forehead. Perhaps of this kind were the dogs of Epirus, mentioned by Aristotle, lib. III. ch. xxi. or those of Albania, so beautifully described by Pliny, lib. VIII. ch. xl.

The MASTIFF.

The Mastiff is an animal of great size and strength, and a very loud barker. The head is very large; the lips are also large, and hanging down on each side. It has a fine noble countenance. Caius informs us that three of these were reckoned a match for a bear, and four for a lion: but, from an experiment made in the tower by James the First, the lion was found an unequal match to only three of them. Two of the Dogs were disabled in the combat, but the third obliged the lion to seek for safety by flight. Great-Britain was so noted for its Mastiffs, that the Roman emperors appointed an officer in this island, whose whole business was to breed, and transmit from hence to the amphitheatre, such as would prove equal to the combats. The Mastiff is usually kept for guarding houses, yards, and other places.

The BULL-DOG.

The nose of this animal is short, and the under-jaw longer than the upper. It is a strong, fierce, and cruel creature, and frequently bites before it barks. It is peculiar to England; and since the barbarous custom of bull-baiting has declined, the breed is become more scarce. This animal has a large thick head, and carries its tail turned upwards.

The Pug-Dog.

The Pug-Dog, or Dutch Mastiff, is an innocent resemblance of the bull-dog, but much smaller. He has a black muzzle, a flat nose, and yellowish brown hair, with a tail turned up in a curl. The ears are usually cut off from those sort of Dogs, to render their heads rounder. Some of them have a black list along the back. It appears to be a useless animal, and to want that fidelity that this tribe generally possess. It is en-

tirely domestic, and will never follow its master to any considerable distance.

The GAZE-HOUND.

This animal obtained the name of Gaze-Hound, from its hunting by the eye, and not by the scent. It hunted indifferently the fox, hare, or buck. It would select from the herd the finest deer, pursue it by the eye, if lost for a time, recover it again by its singular distinguishing faculty; and, if the animal should rejoin the herd, the Gaze-Hound would fix unerringly on the same. This species is either lost or unknown among us.

The TERRIER.

The Terrier is a small rough kind of Hound, made use of to hunt the fox or the badger out of their holes, or rather, by their barking, to give notice in what part of their kennel they reside, when the sportsmen intend to dig them out.

The BLOODHOUND.

The Bloodhound was held in great esteem by our ancestors. Its business was to recover any game that had escaped wounded from the hunter, or had been killed and stolen out of the forest. But in those days, when the country was less peopled than at present, it was more employed in hunting thieves and robbers by their foot-steps. At this time, the country being every where peopled, this variety is entirely worn out.

The LEYMMER.

This animal was of a kind that hunted both by scent, and sight, and in the form of its body partook of the hound and the greyhound. It was led in a leyme or thong, from whence it received its name. It is a species at present unknown to us.

The TUMBLER.

The Tumbler, which is also called the Rabbit Dog, looks like a small greyhound. This animal seems to be at play when he pursues his game. When he goes into a warren, he neither barks nor runs after the rabbits; but, seemingly inattentive, approaches so near as to come within reach, and then seizes them by a sudden spring.

The LAP-DOG.

The Lap-Dog is of various kinds and sizes. The Maltese little Dogs were as much esteemed by the fine ladies of past times, as those of Bologna are among the modern. Small ones are generally preferred, but the more awkward and extraordinary they are, the more they are prized.

The Small Danish Dog.

This is a very gentle and playful animal, and resembles the harlequin Dog, but is shorter. The head is round, the eyes large, and the nose small and slender.

The HARLEQUIN-DOG.

This animal resembles the Danish Dog, but it is longer, and generally black and white; though sometimes white and of a cinnamon colour. There are also several other varieties of them.

The CUR-DOG.

The Cur-Dog, which is also called the House-Dog, is as large as a fox, with upright ears, and a kind of woolly hair beneath the tail. These are generally mongrels, and consequently the shapes and sizes of them must be exceedingly different.

The SHOCK-DOG.

This animal is remarkable for its long curled hair, of which it has such large quantities, that some of the white sort have the appearance of sheep; but their shape is very different, and they have so large a quantity on the head, that they seem to be almost blinded with it.

The



## The Turkish Dog.

The animal called the Turkish Dog differs from the rest of the kind, in being entirely without hair. The skin is bare, and of a flesh colour, with brown spots. They seem to be of the small Danish breed, brought into a warm climate, where, by a succession of generations, they became divested of their hair. They are, therefore, extremely chilly, and unable to endure the cold of our climate, and shiver in the midst of summer.

## The LION-DOG.

The Lion-Dog resembles in miniature the animal from whence it takes its name. The hair of the fore-part is very long, and that of the hinder-part extremely short. The nose is short; the tail is long, and tufted at the point, like that of a lion. But notwithstanding it so much resembles the lion, it is extremely feeble, timid, and inactive. It came originally from Malta, where it is so very small that women carry it about in their sleeves.

## NATURAL HISTORY of the WOLF.

**T**HE Wolf has a long head, a pointed nose, ears sharp and erect, a long bushy tail, long legs, and longish hair. He has large teeth, and is taller than a large greyhound. His colour is generally a pale brown, tinged with yellow, tho' sometimes found white, and, in Canada, sometimes black. The feature which principally distinguishes the visage of the Wolf from that of the dog is the eyes, which opens slantingly upwards, in the same direction with the nose; but in the dog it opens more at right angles with the nose.

The Wolf so nearly resembles the dog, both externally and internally, that he seems modelled upon the same plan. But his nature is so very different, that he only preserves the ill qualities of the dog, without any of the good ones. These two animals are indeed so different in their dispositions, that they have a perfect antipathy to each other. A dog that is stronger, and sensible of his strength, bristles up at the sight of a Wolf, testifies his animosity, valiantly attacks him, endeavours to put him to flight, and does all that is in his power to rid himself of a presence that is hateful to him. They never meet without either flying or fighting. If the Wolf is victorious, he devours his prey: the dog is more generous, and contents himself with his victory.

Wolves are cowardly, though cruel animals; they will fly the presence of man, except they are pressed by hunger, when they prowl by night in vast droves through villages, and destroy any persons they meet. Those which have once had a taste of human flesh, give it the preference; and, perhaps, if they were sufficiently powerful, would eat no other. They have been seen following armies, and arriving in numbers upon the field of battle, where they devoured such dead bodies as were strewed upon the earth, or negligently interred. Those, indeed, which have once fed upon human flesh, choose ever after to attack mankind, and fall upon the shepherd rather than his flock.

Their time of pregnancy is about three months and an half, and the young wolves are found from the latter end of April to the beginning of July. When the she wolves are near the time of bringing forth, they prepare a soft bed of moss in some retired place. They usually bring from five to nine at a litter. The cubs, like those of the bitch, are brought forth blind; the dam suckles them some weeks, and early instructs them to eat flesh, which she prepares for them, by chewing it first herself. The cubs do not leave the den where they have been littered, till they are about six weeks or two months old; after which they follow the dam for several months, and, when they are attacked, she defends them with all her strength, and more than usual ferocity. At other times the female is more timorous than the male; but, at that season, she becomes bold and fearless, choosing

by her own example to teach her young ones future courage. The long continuance of the wolf's pregnancy is sufficient to make a distinction between that animal and the dog. That it is an animal of its own particular species, is likewise evident from the fiery fierceness of the eyes, the howl instead of barking, and the greater duration of its life, which is supposed to be about twenty-one years.

Of all animals, the wolf's appetite for animal food is one of the most vehement, and he has various methods of satisfying this appetite. Nature has given him strength, cunning, agility, and all those requisites which qualify an animal for pursuing, overtaking, and conquering its prey; notwithstanding which, the wolf most frequently dies of hunger. Being long proscribed, and a reward offered for his head, he is obliged to fly from human habitations, and make the forest his place of residence. Naturally dull and cowardly, he is frequently reduced to the verge of famine, when he becomes ingenious from want, and courageous from necessity. When pressed with hunger, he braves danger, and ventures to attack those animals which are under the protection of man, such as lambs, sheep, or even dogs themselves; for all animal food is then equally agreeable. The wolf preys on all kinds of animals, but, in cases of necessity, will feed upon carrion. Horses generally defend themselves against their attacks, but all weaker animals fall a prey to them. Throughout France the peasants are obliged nightly to house their flocks.

It is not certainly known when wolves were extirpated in Scotland; but, according to Hollingshead, they were very noisome to the flocks there in 1577. However, we learn from good authority, that none are to be found there at present. Mr. Buffon, who says there are wolves in Scotland at this time, must certainly have been misinformed. King Edgar is said to be the first who endeavoured to rid this kingdom of such disagreeable inmates, by commuting the punishments for certain crimes into the acceptance of a number of wolves tongues from each offender. In Wales, he converted the tax of gold and silver into an annual tribute of three hundred wolves heads. We find, however, that some centuries after the reign of that Saxon monarch, these animals were again so much increased, as to become the object of royal attention: Edward the First issued out his mandate to Peter Corbet, to superintend and assist in the destruction of them in the several counties of Gloucester, Worcester, Hereford, Salop, and Stafford. Camden informs us, that certain persons at Wormhill, in the county of Derby, held their lands by the duty of hunting and taking the wolves that infested the country, whence they were stiled Wolve-hunt. Wolves were so plenty in Yorkshire in the reign of Athelstan, that a retreat was built at Flixton, in that county, to defend passengers from the wolves, that they should not be devoured by them.

They infested Ireland many centuries after they were extirpated in England, for there are accounts of some being found there as late as the year 1710. The wolf is now an inhabitant of Europe, Asia, Africa, and America, but not so high as the arctic circle. The vast forests on the European continent will always preserve them. The wolves of North America are the smallest, and, when reclaimed, are the dogs of the natives. Those of Senegal are the largest and fiercest, and they prey in company with the lion.

Besides being hunted with greyhounds and harriers, wolves are taken and destroyed by other means: they are secured in traps, by poisoned carcasses prepared and placed for that purpose, and caught in pit-falls. We are informed by Gesner, that a friar, a woman, and a wolf, were all taken in one of these pit-falls in the same night; that the woman lost her senses with the fright, the friar his reputation, and the wolf his life. But notwithstanding every art that is practised to destroy them, wolves multiply amazingly in those countries where the woods are plenty. France, Spain, and Italy, are greatly infested with them.

Though this creature may be useful in North-America,



America; and may be taught to perform the offices of a dog, it is a very noxious animal in Europe, and nothing belonging to him is of any value, except his skin. Of this the furriers make a covering that is both durable and warm, though coarse and inelegant. His flesh is disliked by all other animals, no other creature being known to eat the wolf's flesh, except the wolf himself. When one of these animals receives a desperate wound, he is followed by the rest, who presently dispatch and devour him. The wolf breathes a most foetid vapour from his jaws, and is, in every respect, offensive; a savage aspect, a frightful howl, an insupportable odour, fierce habits, and a perverse disposition, make him detestable while living, and useless after death.

#### NATURAL HISTORY of the FOX.

THE Fox exactly resembles the wolf and the dog internally, and is a crafty, lively, and libidinous animal. It breeds but once in a year, except some accident happens to its first litter, and generally brings forth four or five cubs, which, like puppies, are produced blind. The female goes with young about six weeks. It has been a common received opinion that this animal would produce with the dog kind, but late experiments prove it to be erroneous, and convince us that this animal will mix only with its own species.

The Fox is smaller and slenderer than the wolf; the former being about two feet three inches long, and the latter three feet and an half. The tail of the Fox is longer in proportion, and more bushy; its nose is smaller, and more nearly resembles that of a greyhound, and its hair is softer. Like the wolf, its eyes are obliquely situated; its ears are directed in the same manner as those of the wolf, and, in proportion to its size, its head is equally large.

The Fox has ever been famous for his cunning and his arts; and he appears to merit the reputation he has gained. Of all animals he has the most significant eye, by which he expresses every passion of love, fear, hatred, &c. He is remarkably playful, but, like other savage creatures half reclaimed, he will, on the least offence, bite those with whom he is most familiar. He is greatly delighted with his own bushy tail, with which he often amuses and exercises himself, by running in circles to catch it; and, in cold weather, he wraps it round his nose.

This animal generally keeps his kennel at the edge of a wood, and yet within an easy journey of some farmhouse. From thence he listens to the crowing of the cock, and the cackling of the hen and chickens. He scents them at a distance; he seizes every opportunity, conceals his approaches, creeps slyly along, attacks his prey, and seldom returns without his booty. When he has acquired a larger prey than he can immediately devour, he carries off a part of the spoil, conceals it at some convenient distance, and again returns to the charge. In this manner he will bring them one by one, and thrust them into the earth with his nose: afterwards, at his leisure, he more completely hides them by ramming the loose earth on them, till the calls of hunger incite him to pay them another visit. When this animal observes any springs for catching birds, he takes care to be before-hand with the fowler, and if he finds any fowls entangled in the snare, he very expertly takes them out. He also finds out birds nests, seizes the partridge and quail while sitting, and destroys large quantities of game. He will feed on flesh of any kind, but his favourite food is lambs, rabbits, hares, poultry, and feathered game. When urged by hunger, he will eat carrots and insects; and, if near the sea-coasts, will eat shrimps, crabs, and other shell-fish. In vain does the poor hedge-hog roll itself up into a ball to oppose him; he teases it till it is obliged to uncover itself, and then he devours it. In France and Italy the Fox does incredible damage in the vineyards, by feeding on the grapes, of which he is very fond.

The chase of the Fox requires less preparation than that of the wolf, and is more pleasant and amusing.

The dogs have no great delight in pursuing the wolf, but they are exceeding alert in following the Fox, which chase they prefer to that of the hare or buck. For every part of this chase, the huntsmen have their cant terms. The first year the Fox is called a cub, the second, a Fox, and the third, an old Fox. His tail is called the brush or drag. He is generally pursued by a large kind of harrier or hound, assisted by a smaller breed called terriers, that follow him into his kennel, and attack him there. As soon as the Fox discovers that he is pursued, he makes to his kennel, and takes refuge at the bottom of it; where, for a moment, he loses the cry of his enemies; but the whole pack presently surround the mouth of his retreat; where their vehemence and rage redouble, and the little terrier courageously ventures in. Sometimes the kennel is under a rock, or among the roots of old trees; in such cases the Fox cannot be dug out, nor can the terrier contend with him at the bottom of his hole: but, when he can be dug out, he is usually carried in a bag to some open country, and there set loose before the hounds. The Fox leaves a strong scent, which always keeps up a full cry, and adds to the entertainment.

The smell of this animal is indeed very strong, but that of the urine is most remarkably foetid. It is so offensive to itself, that it will take the trouble of digging a hole in the ground, and there, after depositing its water, cover it over with the earth. It is said the Fox makes use of its urine to force the cleanly badger from its habitation. Upon the truth of this assertion we will not insist; but it is certain that the Fox makes use of the badger's kennel: not on account of its being unable to form its own retreat; but to save itself some trouble: for after the expulsion of the first inhabitant, the Fox greatly enlarges and improves it; making the addition of several chambers, and providentially contriving several avenues to secure a retreat from every quarter.

There are only three varieties of Foxes in this island, which differ from each other in size, but not in form or colour. The greyhound Fox is the largest, tallest, and boldest, and will even attack a grown sheep: the Mastiff-Fox is less; the Cur-Fox is the least, though the most pernicious of the three to the peasant and the farmer; and is continually lurking about out-houses, barns, &c.

In the colder countries round the pole, Foxes are found of all colours; black, blue, grey, iron-grey, silver-grey, white, white with red legs, white with black legs, white with the point of the tail black, red with the throat and belly white, and with a stripe of black extending the whole length of the back, and another stripe crossing it at the shoulders. The common Fox; however, is more universally diffused than any of the former. It inhabits Europe; the cold and temperate parts of Asia; Barbary, but not the hotter parts of Africa; it abounds in North-America; and is also to be found in South-America. They have the same cunning disposition in all countries, and the same eagerness after prey. They commit the same ravages among game, birds, poultry, and the lesser quadrupeds. Their voice is a kind of yelp, and not a bark; and their bite, like that of the wolf, is very hard and dangerous. Their colour, in general, is a kind of a tawny red, mixed with ash-colour; but in this particular they greatly vary. The fur of the white Fox is not much esteemed, because the hair falls off; the blue Fox skins are scarce, and are therefore bought up with great avidity; but the black Fox skin is held in the greatest estimation, and is sold at a very high price. These skins are frequently made into muffs, and are extremely warm and beautiful.

The Brant Fox, described by Gesner and Linnæus, is of a fiery redness. Mr. Brook received one of these from Pennsylvania, which was not above half the size of the common Fox.

The grey Fox inhabits Carolina, and the warmer parts of North America. It agrees with the common Fox in form; but never burrows. It affords but little diversion to the sportsman, but takes to its retreat after about a mile's chase. It feeds on poultry, birds, &c. and has no strong smell. It is easily tamed.



The silvery Fox, or *renard argente*, resembles the common Fox in form, and is found in great plenty in Louisiana. They have a beautiful coat; having long silvery hair springing over short brown hair, which gives them a very elegant appearance. As they live in forests which abound with game, they never attack poultry.

The Fox is very prejudicial to the husbandman, by taking away, and destroying his lambs, poultry, geese, &c. especially in places that are near forest-woods, and covert places. The best way of destroying them, is with guns or traps, in the following manner: if you intend to shoot them, procure a sheep's paunch, and tying it to a long stick, rub your shoes well upon it, that the Fox may have no scent of your feet, and draw the paunch after you, with which make a trail a mile or two in length; and order it so as to bring it near some thick-headed-tree. At which place, when you have made your trail, leave the paunch, and with your gun get up into the tree; and as soon as it begins to be dark, you will see him come by you upon the scent of the trail, where you may shoot him. Observe that you draw the trail to windward of the tree, if you can.

But if you mean to catch them with a steel-trap, which is the surest method, choose a place to set it in a plain part of a large field; let it be out of the way of all paths, but not near either a hedge or any shelter. Open your trap, and lay it upon the ground, and cut out in the turf just the exact form of it, and take out so much earth as may make room to lay it, covering it again very neatly with the turf you cut out; and, if the joints of the turf will not close exactly, get some of the fine mould that is to be found in a new cast-up mole-hill, and fill the joints with it, taking some grass, and sticking it in the mould, as if it grew there. Make all so fine and plain, as that it may deceive your own eye to look upon it. About eight or ten yards from the trap, three several ways, scatter some of the fine mould that you had out of the mole-hill, very thin upon a place about fourteen or fifteen inches square; and upon these places, and where the trap is, lay two or three small bits of cheese, and with a sheep's paunch, as before directed, draw a trail of about a mile long to each of the three places, that are at a distance from the trap, and from thence to the trap, that the Fox may come upon one of those places first, which will make him approach the trap with more boldness, where you will seldom fail of him; but you must observe not to fasten your trap, but to leave it loose, that the Fox may draw it to the hedge-side, or to some cover, or he will bite off his leg, and be gone.

Some bend down a stick in the wood, and set a trap for them in their paths, like that which is set for wood-cocks, which hangs them up, or any other sort of vermin.

#### NATURAL HISTORY of the JACKALL.

THE Jackall is vulgarly called the lion's provider, from an opinion that it rouses the prey for that animal. The fact is, every creature in the forest is set in motion by the cries of the Jackalls: the lion, and other beasts of rapine, attend to the chace by a kind of instinct, and seize those timid animals that betake themselves to flight at the noise of this nightly pack. Though one of the most common among the wild animals in the East, there is scarce any less known in Europe, or more indifferently described by natural historians. It is said to be of the size of a common fox, and resembling that animal in the hinder parts, particularly the tail; and the wolf in the fore-parts, especially in the nose. Its legs are shorter than those of the fox, and its colour of a bright yellow. The Jackall seems to be placed between the wolf and the dog; it appears to have the ferocity of the wolf, and the familiarity of the dog. Its cry is between barking and howling, and is a lamentation resembling that of human distress. In its pursuits it is more noisy than the dog, and more voracious than the wolf. It is an inhabitant of all the hot and temperate

parts of Asia, and is found in Barbary, and other parts of Africa, as low as the Cape of Good Hope. The Jackall never goes alone, but always in packs of forty, fifty, or even two hundred together, and they hunt like hounds in full cry from evening till morning. Nothing can escape them: they make even the smallest animals their prey; and yet, when thus united, have the courage to face the largest: they destroy the flocks and poultry, ravage villages and gardens, and even destroy children that are unprotected. When they cannot obtain living prey, they will feed on roots, fruits, and carrion. They will greedily rake up the dead from their silent graves, and feed on the putrid corpses; for which reason, in many countries, bodies are interred a great depth, and well secured against their attacks. They are constant attendants upon caravans, and armies, expecting that death will furnish them a banquet. Their howling is loud and dreadful. In the day time they are silent, and retire to their dens; and, we are informed by Dallon, that, notwithstanding their natural ferocity, they are sometimes tamed, and kept among domestic animals.

Linnæus mentions an animal of this kind about the size of a large cat, inhabiting Surinam; with the tongue fringed on the sides, and with warts on the cheeks, above the eyes, and under the throat: the colour of the upper-part of the body greyish, and the lower white: it has five toes before, and four behind. It is mentioned by no other naturalist except Linnæus.

#### NATURAL HISTORY of the ISATIS.

THE hair of the Isatis is softer than that of a common fox. Some of these animals are found blue; some are white at one season of the year, and brown at another. Their hair is much longer in winter than in summer, which is usual with animals of cold climates. The Isatis is very common in all the northern countries bordering upon the icy sea; and is seldom seen but in the coldest countries. It is principally found in the mountains and naked regions of Norway, Siberia, and Lapland. In the form of its body, and the length of its tail it resembles a fox; but is more like the dog in the shape of its head, and the position of its eyes. These animals live in the cliffs of rocks, not being able to burrow on account of the frost; and two or three pair generally inhabit the same hole. They bark like the dog, and go nine weeks with young. They have all the cunning of the common fox; and prey on the young of geese, ducks, and other water fowl, before they can fly. In Greenland, necessity obliges them to feed on berries, shell-fish, or any thing the sea casts up; but their principal food in the north of Asia, and in Lapland, is the Leming, or Lapland marmot. The Leming is a very wandering animal, and the Isatis will desert the country three or four years in pursuit of them. Unless this animal is killed in the winter, the fur is of no value.

#### NATURAL HISTORY of the HYÆNA.

THE Hyæna is nearly of the size of a wolf, and resembles that animal in the shape of its head and body: the head, however, is a little broader, and less pointed, and the ears are longer. The hair on the body is long, coarse, and rough, and of an ash-colour; marked with long black stripes from the back downwards. Its tail is very full of hair; sometimes plain, and sometimes barred with black. It is more savage and more untameable than other quadruped, and is continually in a state of rage or rapacity; for ever growling, except when it is receiving its food. Its eyes then glisten, the bristles on its back stand erect, and its teeth appear, which altogether give it a most dreadful aspect, and the terror is heightened by its horrible howl, which, it is said, is sometimes mistaken for that of a human voice in distress. The Hyæna, for its size, is the most ferocious, and the most terrible of all other quadrupeds; and its courage is equal to its ferocity: it defends itself against the lion, is a match for the panther, and frequently overcomes



overcomes the ounce. It is an obscure and solitary animal, and chiefly inhabits Asiatic Turkey, Syria, Persia, and Barbary. It resides in the caverns of mountains, in the clefts of rocks, or in dens under ground, which it has formed for itself. Like the jackall, it violates the repositories of the dead, and greedily devours the putrid contents of the grave: like it too, it preys upon the flocks and herds; and when destitute of other food, will eat the roots of plants, and the tender shoots of the palms. The superstitious Arabs, when they kill a Hyæna, carefully bury the head, lest it should be applied to magical purposes, as the neck was of old by the Thessalian forcerers. It is indeed no wonder that an ignorant Arab should attribute to its remains preter-

natural powers, when even the antients believed that it changed its sex, and that it had the power of charming the shepherds, and, as it were rivetting them to the place on which they stood. This animal is so cruel, fierce, and malevolent, that, even when taken very young, it cannot possibly be tamed: it lives by depredation, and ravages with insatiable voracity. The voice of this animal is a hoarse disagreeable mixture of growling and roaring.

There is an animal of this kind, inhabiting Guinea, Ethiopia, and the Cape, the colour of which is a reddish brown, marked with distinct round black spots; and is called by Mr. Pennant, the spotted Hyæna.

## C H A P. IX.

### The NATURAL HISTORY of QUADRUPEDS of the CAT Kind.

*Containing a particular Account of the CAT; the LION; the TIGER; the PANTHER; the LEOPARD; the OUNCE; the LYNX; the COUGAR; the CAT-A-MOUNTAIN; the BEAR; the RACCOON; the BADGER, &c. &c.*

THE class of the Cat kind are principally distinguished by their sharp and formidable claws, which they can extend and conceal at pleasure. They lead a solitary ravenous life; for most of these ferocious tribe seek their food alone; and, except at certain seasons, are even enemies to each other. The dog, the wolf, and the bear, will sometimes live upon vegetable food; but the lion, the tiger, the leopard, and all of the cat kind, feed only upon flesh.

These animals are, in general, fierce, rapacious, subtle, and cruel; and even unfit for society among each other. It is probable, notwithstanding, that the fiercest might be rendered domestic; but the experiment would be attended with too much trouble. The chariots of conquerors have been drawn by lions, and tigers have tended those herds which they now destroy.

All animals of the Cat kind are nearly allied to each other, though differing in size or in colour: they are equally fierce, artful, and rapacious; and he that has seen one has seen them all. In other creatures many changes are wrought by human assiduity; but all of this kind are inflexible in their forms, and wear the impression of their natural wildness strong upon them. The dog, the cow, or the sheep, vary in different countries; but lions and tigers are every where the same: even the colour is nearly alike in all; and the slightest alterations give the animal a different denomination. The Cat kind are remarkable for the sharpness and strength of their claws, which they thrust from their sheath when they seize their prey: they are also equally remarkable for the roundness of their head, the shortness of their snout, and the large whiskers which grow on the upper-lip. They have also thirty teeth, which are very formidable; but are not so well calculated for chewing their prey as for tearing it. In the dog kind, the greatest strength lies in the under-jaw; but in these the principal force lies in the claws, which they can easily extend, and their gripe is so powerful that nothing can open it. They have not the swiftness of most other animals; but generally catch their prey by surprise, instead of hunting it fairly down.

Notwithstanding all these qualifications for slaughter, animals of the Cat kind are cowardly and timid, and seldom make an attack at a disadvantage: when the force against them is superior, or even equal to their own, they have recourse to flight.

#### NATURAL HISTORY of the C A T.

THIS animal has been taken under human protection, and is considered as a faithless friend, whose business it is to oppose an insidious enemy. This is

the only animal of the kind, whose services can compensate for the trouble of their education, and whose size is too inconsiderable to make its anger formidable. Though easily offended, and often capricious in its resentments, it has not strength sufficient to do any considerable mischief. There is nothing more playful than the kitten; but, in some degree, it loses this disposition as it grows old, and its innate treachery is displayed. The Cat has only the appearance of attachment: its timid approaches discover that it dreads its master or distrusts his kindness. The caresses of the dog are sincere; the Cat often gains confidence only to abuse it.

This animal is indeed an useful, but a deceitful domestic. It is active, neat, sedate, delicate, and voluptuous: it delights in ease, and seeks the softest cushions to repose on. When pleased, it purrs and moves its tail; and, when angry, spits, hisses, and strikes with its foot. Its eyes shine in the night: and its hair, when rubbed in the dark, emits fire. It is proverbially tenacious of life, and always lights on its feet.

The Cat goes sixty-six days with young, and usually brings about five or six at a time, which are produced blind. For some weeks the female feeds them with her milk, and such small animals as she can take by surprise, by which means they are early accustomed to rapine. These animals engender when they are about a year old, and though they are remarkably salacious, they are very jarring lovers. They live to about the age of ten years.

All animals that are weaker than themselves, are to them an object of destruction, and they do not always reject vegetables. Hares, rabbits, birds, rats and mice, bats, moles, toads, and frogs are all equally pursued, though they may not perhaps be equally acceptable; for the mouse appears to be their favourite game. Nothing discovers the natural malignity of the Cat, so much as the fondness for sporting with their little captives before they kill them. Though the Cat is a domestic animal, it cannot properly be called a dependant. Though perfectly tame, it acknowledges no obedience, and no art can force it to controul any of its inclinations. In general it is more attached to the house in which it resides, than to its human inhabitants, and always remains there if the persons who quit the house do not carry it with them; for they are never so strongly attached to a master as to follow him out of the house: and, if it is carried elsewhere, it seems for a while bewildered with its new situation. The Cat is much afraid of water, of cold, and of disagreeable smells. It delights in being near the fire, or in the sun: is excessively fond of some plants, such as marum, cat mint, valerian, &c. and when it finds them growing in any garden, it will rub itself



itself against them till it wears them out. It is also fond of rubbing against those persons who carry perfumes.

The teeth of this animal being made rather for tearing than chewing its aliments, it eats slowly and with difficulty; and therefore it prefers the tenderest food, particularly fish, which it eats as well boiled as raw. It does not sleep soundly, and frequently pretends to be asleep, the better to deceive its prey. In walking it treads so softly that it does not make the least noise; and as to the offices of nature, it is remarkably cleanly. Linnaeus says, the Cat washes its face with its fore-feet at the approach of a storm. Though this animal is the unaccountable antipathy of many, it is beloved by the Mahometans: and Maillet, who expatiates largely on the beauty of Egyptian Cats, adds, that the inhabitants build hospitals for them.

Cats, of all quadrupeds, were those whose death was the most severely punished by the Egyptians, whether it had been occasioned through inadvertence, or on purpose; a person was equally criminal when he killed a Cat, and that crime could only be expiated by the most cruel torments. But when the Cat dies a natural death, says Herodotus, all the people of the house where that accident has happened shave their eye-brows as a token of sorrow. The Cat is embalmed, and honourably interred. This veneration of the Egyptians for the Cat, was founded on the current opinion among them, that Diana, to avoid the fury of the giants, had concealed herself under the figure of that animal. The god Cat was represented sometimes with its whole native form, and sometimes with the body of a man, bearing a Cat's head.

#### THE WILD CAT.

The Cat in its savage state is much larger than the domestic Cat; and its fur being longer, makes it appear larger than it really is. Its head is bigger, its face flatter, and its teeth and claws much more formidable. Being formed for rapine, its muscles are very strong: its tail, which is of a moderate length, is very thick and flat, marked with alternate bars of black and white, the end always black: the general colour of these animals, in England, is a yellowish white, mixed with a deep grey; and the fur is very soft and fine. These colours, upon close inspection, will be found to be disposed like the streaks on the skin of the tiger. This animal does not differ specifically from the tame Cat; the latter being originally of the same kind, but altered in colour, and some other trifling accidents, as are common to animals which are reclaimed from the woods; and domesticated. The Wild Cat is found in our larger woods; and is the most destructive of the carnivorous kinds in this kingdom. It lives mostly in trees, and feeds only in the night. It multiplies as fast as the domestic Cat, and has been often known to breed with it. The Wild Cat was formerly reckoned among the beasts of chase; as appears by a charter granted by Richard the II<sup>d</sup> to the Abbot of Peterborough, permitting him to hunt the Hare, Fox, and Wild Cat; and it was the object of the sportsman's diversion in much earlier times. It is probable, however, that these are not original inhabitants of this kingdom, but were first introduced in a domestic state, and afterwards, by ill usage or neglect, became wild in the woods.

#### NATURAL HISTORY of the LION.

**T**HIS animal has a large head, short round ears, and a face covered with short hair. On the upper part of the head, the whole neck and shoulders, and the chin, are long shaggy hairs like a mane. The hair on the body and limbs is short and smooth, and long at the bottom of the belly. It has very strong limbs, and a long tail, with a tuft of long hair at the end. Its colour is tawny, but on the belly inclining to white. The length of the largest Lion, from the nose to the tail, is about eight feet; and the tail four feet. The Lioness is less, and has no mane.

The influence of climate upon mankind is small; he is found to subsist as well under the frozen poles, as beneath the torrid zone; but almost all other animals have their peculiar latitudes, beyond which they cannot live, either perishing with a moderate cold, or expiring for want of a frozen air, even in a temperate climate. The rein-deer never deserts the icy fields of the north, and the Lion degenerates when taken from beneath the line. Man is an inhabitant of the whole earth, but all inferior animals have their peculiar district. Terrestrial animals are found larger, fiercer and stronger in the warm, than in the cold and temperate climates. They are also more courageous and enterprising; all their dispositions seeming to partake of the ardour of their native soil.

The Lion is an inhabitant of all parts of Africa and the hotter regions of Asia, such as India and Persia, and a few are still to be found in the deserts between Bagdat and Bassorah, on the banks of the Euphrates; but they abound chiefly in the torrid zone, where their size is the largest and their rage more tremendous, being enflamed by the influence of a burning sun on a most arid soil. The Lions of Mount Atlas, the tops of which are eternally covered with snow, have neither the strength nor the ferocity of those amidst the scorched and desolate deserts of Zarea or Biledulgerid. For in those burning deserts, where rivers and fountains are denied, they live in a perpetual fever; a sort of madness, fatal to every animal they meet with. Happily, indeed, the species is not very numerous, and seems diminishing daily, as all modern travellers in these countries have assured us. The Romans, in one year, carried fifty times as many Lions from Lybia, to combat in their amphitheatres, as are now to be found in the whole country. In Turkey, Persia, and the Indies, their numbers are also diminishing daily. This diminution is easily accounted for: it is occasioned by the increase of mankind, who alone are capable of subduing these tyrants of the forest. The arms of even an Hottentot or a negro make them more than a match for this noble animal, and they are generally victorious when they attack him. When they have discovered the Lion's retreat, they arm themselves with spears headed with iron, and provoke him to the combat: four men are generally considered as sufficient for such an encounter. The first against whom the lion flies, receives him on his spear, which furnishes the others with an opportunity of attacking him behind; the Lion, finding himself wounded in the rear, turns that way, which gives the first man time to recover. Thus is he attacked on all sides, till at length they disable and dispatch him.

The arts of man, thus exercised, serve to enervate and discourage these animals, as well as conquer them; for they are brave only in proportion to the success of their former encounters. In the vast deserts of Africa, where man has not fixed his habitation, lions are very numerous, and preserve their natural strength. Accustomed to conquest in their engagements with other animals, they become intrepid and terrible. They have never experienced the dangerous combinations of man, and therefore boldly face him, seeming to brave the force of his arms. Nor are they afraid of numbers; a single lion of the desert frequently attacks an entire caravan, and, when he finds himself overpowered, he maintains an obstinate combat, and faces the enemy till he dies: on the contrary, those lions which inhabit the peopled countries of Morocco and India, having experienced man's superiority, have so far lost their courage, as to be scared away with a shout; and only venture to attack the timid and unresisting flocks and herds, which women and children are sufficient to protect.

From this alteration in the Lion's disposition, it seems probable that the Lion might be tamed. The keepers of wild beasts often play with this animal, pull out his tongue, and even chastise him without a cause, which he usually permits with the utmost composure; but, if his anger should happen to be excited, the consequences are terrible. We are informed that a gentleman kept



a Lion in his chamber, and employed a servant to attend it, who, as is usual, sometimes caressed and sometimes chastised it: this gentleman was one morning awakened by a noise in his room, which he could not immediately discover the cause of; but, drawing the curtains, he perceived the Lion growling over the man's head, which he had separated from the body, and tossing it round the floor with his paws. He therefore caused the animal to be immediately secured.

As the passions of the Lion are strong, and his appetites vehement, it is not extraordinary that his natural ferocity should return; but he seldom exerts it against his benefactors. It appears, indeed, from numberless accounts, that his anger is noble, his courage magnanimous, and his disposition grateful. His courage is tempered with mercy, and he has been known to spare the weaker animals, as if they were beneath his attention.

The eyes of a Lion are always bright and fiery, and they preserve this look of terror even in death. The structure of the paws, teeth, eyes, and tongue, are perfectly the same as in a cat, and these two animals so nearly resemble each other in the internal parts, that there is hardly any distinction but in their size.

When hungry, the Lion attacks any animal that comes in his way; but, as he is a formidable enemy, and therefore carefully avoided, he is sometimes obliged to hide, in order to take them by surprise; and when his prey comes within a proper distance, he springs at it, and frequently seizes it at the first bound. His teeth are so very strong, that he finds no difficulty in breaking the bones of an animal, and he swallows them with the flesh. He laps like a cat, and drinks frequently, but slowly. He requires about fifteen pounds of raw flesh in a day, and prefers that of live animals, or of those which are just killed; seldom choosing to touch the bodies of any creature when they begin to putrify.

The roaring of the Lion, when heard in the night, and re-echoed by the mountains, resembles distant thunder. This roar is his natural note; his cry of anger being a different growl, which is short, broken, and reiterated. His cry of anger is also much louder and more formidable. He then lashes his sides with his long tail, and his mane seems to stand like bristles round his head; the muscles of his face are greatly agitated, and his huge eye-brows cover a great part of his glaring eye-balls; he discovers his teeth and tongue, and extends his formidable claws. Thus prepared for the war, few of the natives of the forest will venture to engage him. The elephant, the rhinoceros, the tiger, and the hippopotame are the only animals that presume to oppose him singly; but neither the leopard nor the wild boar will shun the combat, when provoked. They do not seek the Lion to engage him, but they will not fly at his approach. When compelled by extreme hunger, and then only, the Lion will attack those animals, but otherwise they pass by each other very quietly.

The young Lion always lives in the forest, at a great distance from any human habitation, where he remains while he is able to live by his natural industry; but when he becomes old, and less capable of hunting the savage inhabitants in those retreats, he ventures into places more frequented; attacks the flocks and herds near the habitation of the shepherd or the husbandman, and depends for support rather on his courage than his activity and address. In these desperate sallies, however, he never attacks men, if quadrupeds are to be found, unless they provoke him to engage.

The Lioness goes five months with young, and never produces more than two cubs at a time, which are harmless, pretty, and playful: they remain about twelve months at the teat, and are five years in coming to perfection. As to the length of a Lion's life, naturalists have hitherto been much mistaken; Mr. Buffon, and some others, saying they did not live above twenty or twenty-two years. But Pompey, the great he Lion, which died in the year 1760, was known to have been above seventy years in the Tower; and another lately died there, aged sixty-three years and upwards, which

No. 8.

was brought from the river Gambia. It is indeed highly probable, that, in his native forests, his age is equal at least to that of man.

The attachment of the Lioness to her young is excessive. Though naturally less strong, less courageous, and less mischievous than the Lion, she becomes terrible when she has young ones to make provision for: she then, with more intrepidity than the Lion, throws herself among men, and other animals; destroys every creature she finds, without distinction; loads herself with the spoil, and carries it reeking to her cubs, which she early initiates to cruelty and slaughter. She chooses, for her young, the most retired and inaccessible places, and often hides her tracks by brushing them out with her tail; and, if she has strong apprehensions of danger, she removes her young to another place. If she is obstructed in this office, she defends them courageously, and fights till she expires or conquers.

The Arabs entertain a notion that the Lion spares the tender sex, but Dr. Shaw informs us, that they make no distinction in these days: he likewise acquaints us that the flesh of the Lion is often eaten in Barbary, and that it resembles veal in taste. The animal called puma, which is mistaken for the Lion, is, when compared, a very contemptible animal, without either the shape, the size, or the mane of the Lion.

Plutarch says, that the Lion was consecrated to the sun; because, of all animals with crooked claws, it is the only one that is born with sight, and because it sleeps very little, and with its eyes open; but this is fabulous. The Lion was consecrated to Vulcan in Egypt, on account of its fiery constitution. The poets yoke two Lions to the chariot of Cybele, as appears by several medals. The effigy of a Lion was also carried in the sacrifices of that goddess; because the galli, her priests, had discovered the secret of softening and even taming Lions, to such a point as to touch and caress them without fear, according to Varro. The Leontines adored the Lion, and put its head on their coins.

#### NATURAL HISTORY of the TIGER.

**N**O quadruped can be more beautiful than this animal; the glossy smoothness of his hair, the extreme blackness of the streaks with which he is marked, on a ground of a bright yellow colour, agreeably strike the beholder. The elegance of his form is equal to the beauty of his colouring. He is larger than the leopard, though slenderer and more delicate. But the disposition of this animal is as mischievous, as his form is beautiful; as if providence intended to shew that beauty was of no estimation, by bestowing it on the most noxious of animals. The Tiger is peculiar to Asia, and is found as far north as China and Chinese Tartary; but the greatest numbers, the largest, and the most cruel, are met with in India and its islands. The principal distinction of the Tiger, and in which it differs from other mottled beasts, is in the form of its colours, which run in streaks in the same direction as the ribs, from the back down to the belly. On the leopard, the panther, and the ounce, the colours are broken in spots all over the body; but in the Tiger they extend lengthwise, and hardly a round spot is to be found on its skin.

Of all animals the Tiger most resembles the cat in shape, which, if observed through a proper magnifying glass, will convey a tolerable idea of the former. The Tiger is the only animal whose spirit seems untameable: neither force nor flattery has the least effect on its stubborn nature; and with equal malignity it snaps at the hand that feeds it, as that by which it is chastised. One of these animals was lately in the Tower, which had the appearance of being a good-natured inoffensive creature; it had neither ferocity nor anger in its countenance, and yet it was fierce and savage beyond measure; correction could not terrify it, nor indulgence tame it. The lion seldom ravages except when excited by hunger; but the Tiger is insatiable,

S

and



and continues the carnage after he is glutted with slaughter. When he discovers a flock or an herd, he gives no quarter, but levels all with indiscriminate fury, hardly finding time to appease his appetite, he is so intent upon satisfying the malignity of his nature. Animals of all kinds, whether wild or tame, fall a sacrifice to his fury, and he sometimes ventures even to attack the lion.

Tigers are the scourge of the country where they inhabit: they lurk among the bushes, on the sides of rivers, and almost depopulate many places; they seem to prefer preying on the human race rather than on any other animals. They do not pursue their prey, but bound on it from their ambush with great elasticity, and from a distance that is almost incredible. If they miss their object, they instantly retire; but if they succeed, they carry off their prey with the greatest ease, even if it is as large as a buffalo. If they are undisturbed, they plunge their head into the body of the animal up to the very eyes, as if it were to satiate themselves with blood. In their devastations, there is a sort of cruelty unknown to the generous lion; as well as a kind of cowardice in their sudden retreat on any disappointment.

There is a popular notion in some parts of India, that the rhinoceros and the Tiger are in friendship, because they are often seen near each other. The truth is, the rhinoceros, like the hog, loves to wallow in the mire; on which account he frequents the banks of the rivers; and the Tiger, to quench his raging thirst, is found in places contiguous to them.

Happily for the rest of nature, this animal is not common; the species being chiefly confined to the warmest provinces of the East. Some travellers have compared the Tiger to an horse, with respect to size, and others to a buffalo; while others have only said it was much larger than a lion. Mr. Buffon informs us that he has been assured by one of his friends, whose veracity he can rely on, that he saw a Tiger in the East-Indies of fifteen feet long. He probably included the tail, in these dimensions; therefore, allowing four feet for that, it must have been eleven feet from the tip of the nose to the insertion of the tail.

To give a complete idea of the strength of the Tiger, we shall quote the substance of a passage from father Frenchard, who saw a combat between a Tiger and two elephants at Siam. It was within a lofty pallisade, about an hundred feet square; at first three elephants were produced, with their heads and part of their trunk covered with a kind of armour: a Tiger was then brought forth from its den, of a size much larger than he had ever seen before. It was at first held with cords, and one of the elephants approaching, gave it several blows on the back with its trunk with such force, that the Tiger fell, and for some time lay motionless; but when he was set at liberty, though the first blows had greatly abated his fury, he made at the elephant with a loud shriek, and aimed at seizing his trunk. The elephant drew it up with great dexterity, received the Tiger on his great teeth, and threw it up into the air: after this it was discouraged from venturing again to approach the elephant; instead of which he made several circuits round the pallisade, frequently attempting to fly at the spectators. At length three elephants were sent against it, who struck it so terribly with their trunks, that it once more lay for dead; and it certainly would have been killed, had not the combat been put a stop to. From this account we may form an opinion of the strength of this animal, which under such disadvantages, ventured to continue the engagement against such potent enemies that were covered and protected from his fury.

We are informed by captain Hamilton, that in the Sundah Rajha's dominions, there are no less than three sorts of Tigers, the smallest of which are the fiercest. The small ones are about two feet high, the second three feet, and the larger sort above three feet and an half high. But the latter, though possessing superior powers, is less rapacious than either of the former. This formidable animal is called the royal tiger, and does not seem so ravenous nor so dangerous.

We have no certain accounts as to the number of young which the Tigress brings forth, but it is said she produces four or five at a time. Though furious at all times, upon this occasion her ferocity is incredible. If she is robbed of her young, enraged she pursues the spoiler, who, in order to save a part, usually drops one of her cubs: this she carries back to her den, and again pursues him; she then drops another, with which she runs to her den as with the former, and the plunderer generally escapes with the remainder before she returns. If she is robbed of all her young, she becomes desperate, boldly approaching the towns, where she commits incredible slaughter.

The skin of the Tiger is much esteemed all over the east, especially in China, where the mandarins cover their seats of justice with it; but in Europe, those of the panther and leopard are held in much greater estimation. The Indians sometimes eat the flesh of this animal, though they do not look upon it as a delicacy. There is an animal of America, improperly called the red Tiger, which Mr. Buffon calls the cougar: it is very different from the tiger of the East.

The Tiger often accompanies the monuments of Bacchus; and the chariot of that god is usually drawn by tigers. Tigers are sometimes seen at the feet of the Bacchanals. Is it to characterise the fury with which they are agitated?

#### NATURAL HISTORY of the PANTHER.

THIS animal has been mistaken for the tiger by many naturalists; and indeed it approaches next to it in size, in beauty, in cruelty, and in its general enmity to the animal creation. It is however spotted, and not streaked like the tiger; in which particular that animal differs also from the leopard, and most of the inferior ranks of this mischievous family. The Panther is an inhabitant of Africa, from Barbary to the remotest parts of Guinea. It is to Africa what the tiger is to Asia, with this alleviation, that it prefers the flesh of other animals to that of mankind; but, when excited by hunger, attacks every thing that hath life, without distinction. It seizes its prey like the tiger, always by surprize, and will also climb up the trees in pursuit of monkeys and lesser animals. It is an untameable species, always retaining its fierce malevolent aspect, and continual growl or murmur.

The ancients were well acquainted with this animal. One would indeed have imagined that the Romans would have exhausted the deserts of Africa, by the numbers they drew from thence for their public shews. Scarus exhibited one hundred and fifty Panthers at one time; Pompey the Great four hundred and ten, and Augustus four hundred and twenty; but though they thinned the coasts of Mauritania of these animals, they swarm in the southern parts of Guinea to this day.

#### NATURAL HISTORY of the LEOPARD.

THE Leopard, called also the panther of Bengal, is a native of Senegal and Guinea. The principal differences between this animal and the panther abovementioned are these. The large panther is often found to be six feet long, from the nose to the insertion of the tail, and the Leopard or panther of Senegal, seldom exceeds four. The large panther is marked in different places with five or six spots, forming a kind of circle, with a large one in the middle. The latter has a more beautiful coat; the spots are smaller and disposed in clusters, which have a pleasing appearance, as the yellow ground is more brilliant. As to the rest, the spots of both are black, they are both whitish under the belly, and the tails of both are long; but those of the Leopard are rather longer in proportion. These animals spare neither man nor any other creature: when they cannot get a sufficient supply of the beasts of the chase, they descend in crouds from the internal parts of Africa, and make terrible havock among the numerous



# QUADRUPEDS.



NYL-GHAU



OCELOT

CHIMPANZEE  
or ORANG-OUTANG



ONCE



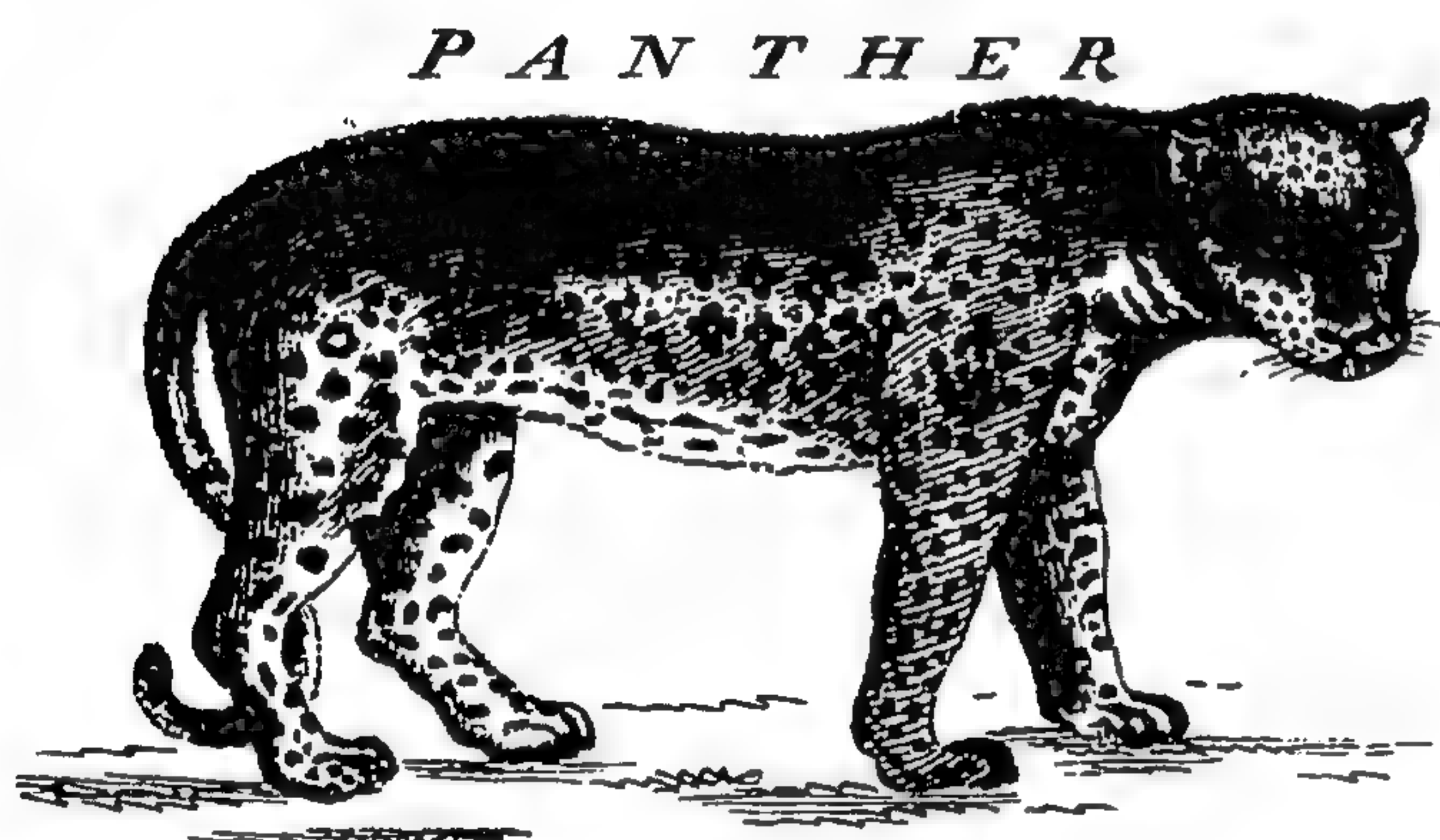
An OPOSSUM



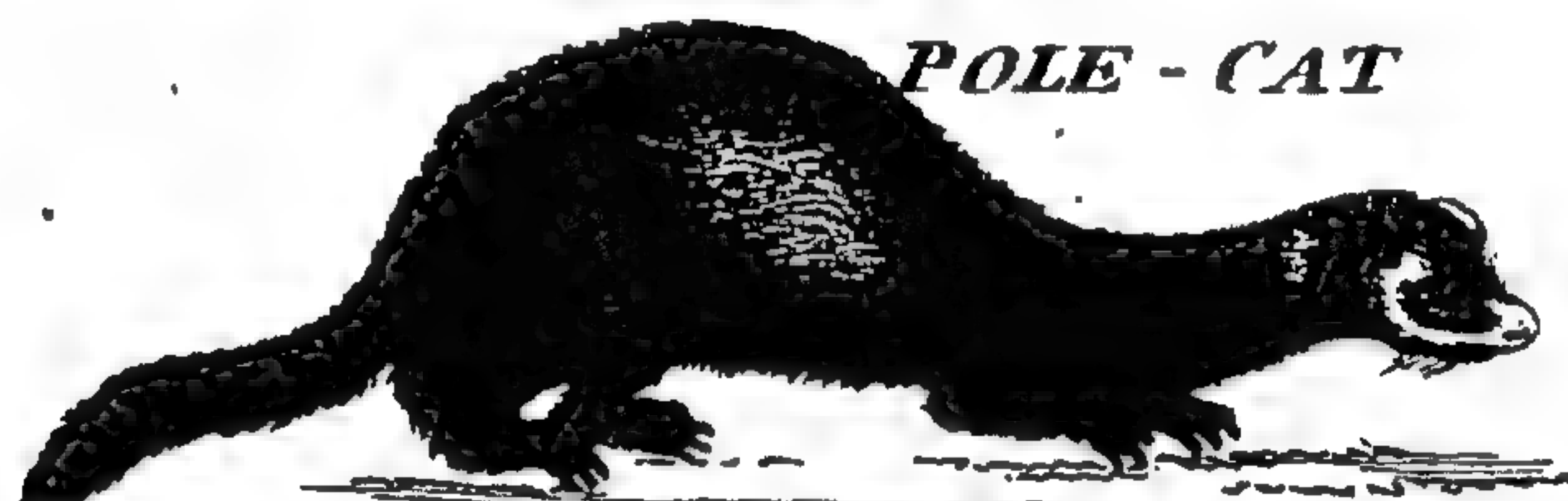
An OTTER



PANGOLIN

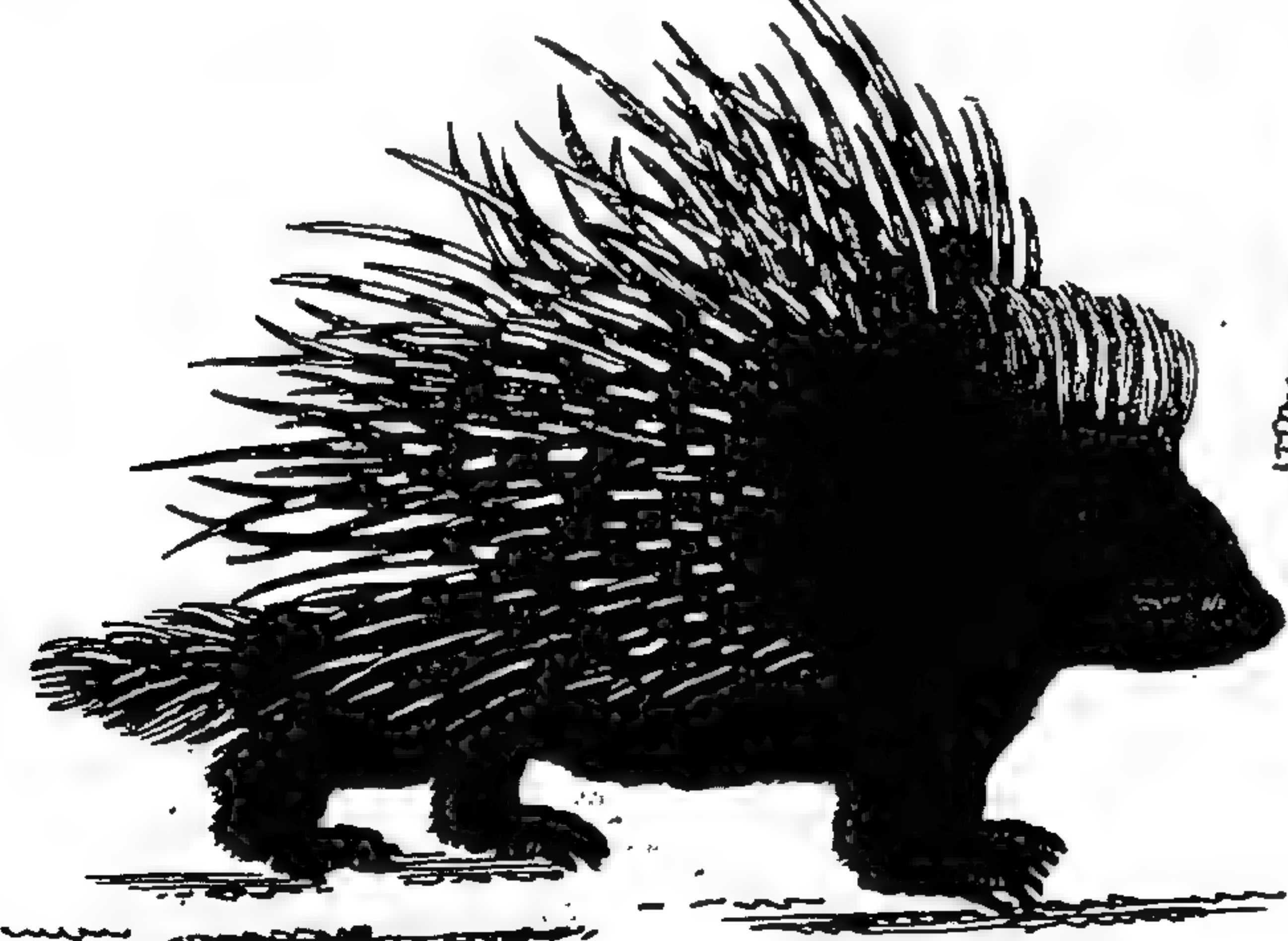


PANTHER



POLE-CAT

The CRESTED PORCUPINE



BRASILIAN  
PORCUPINE

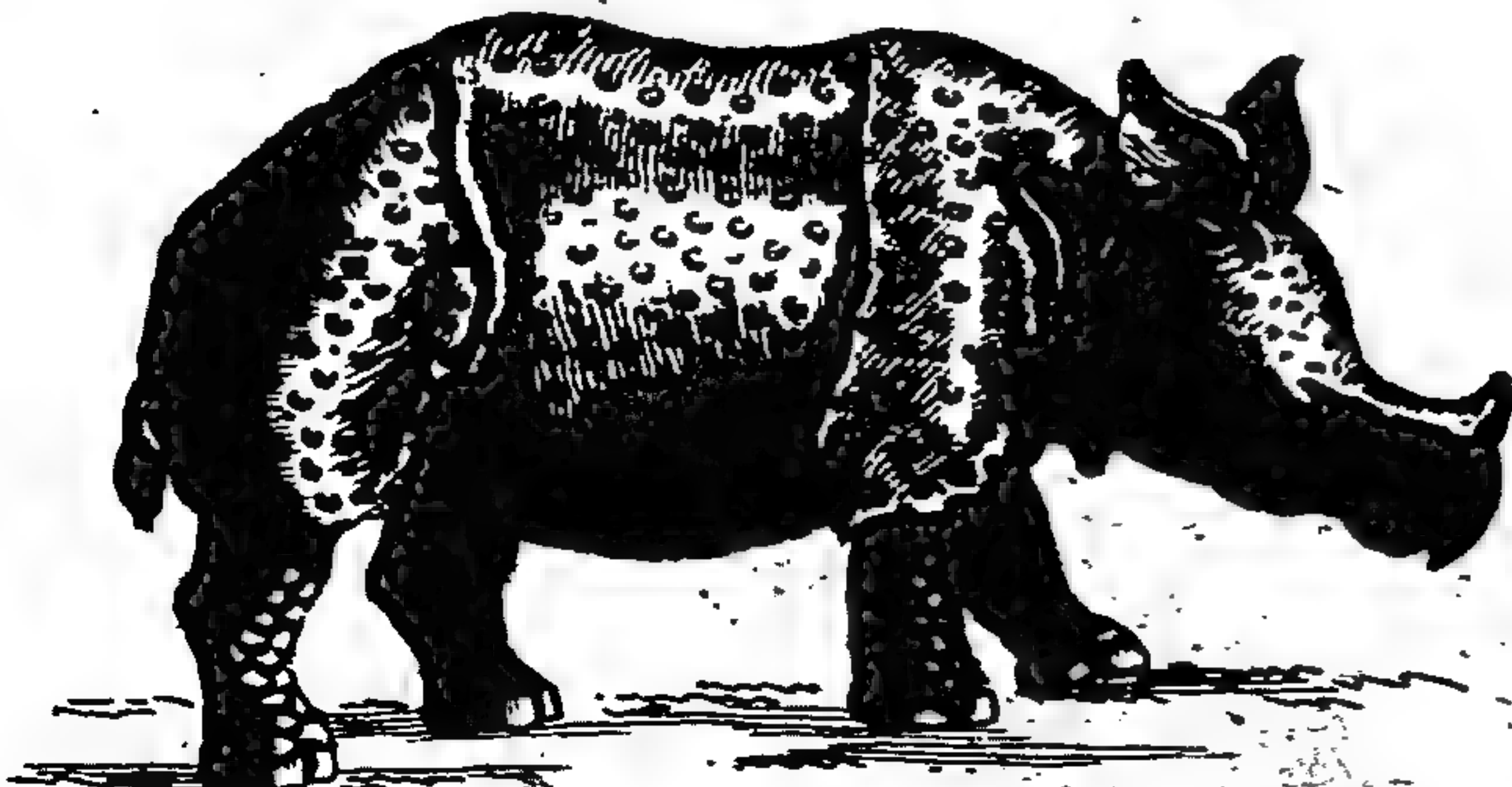


CANADA-PORCUPINE



RACKOON

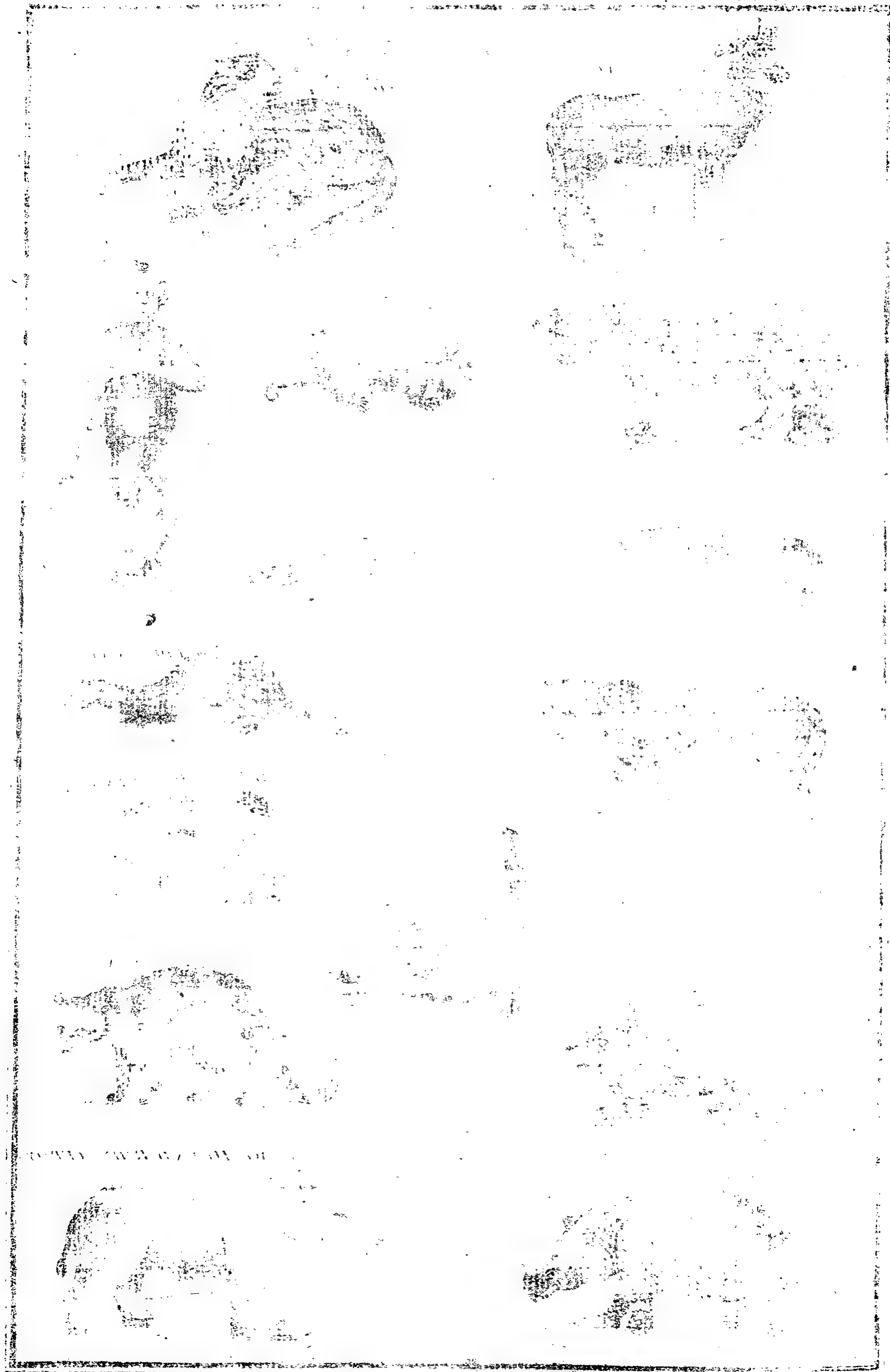
The ONE-HORN'D RHINOCEROS



The TWO-HORN'D RHINOCEROS









# QUADRUPEDS



JAGUARA



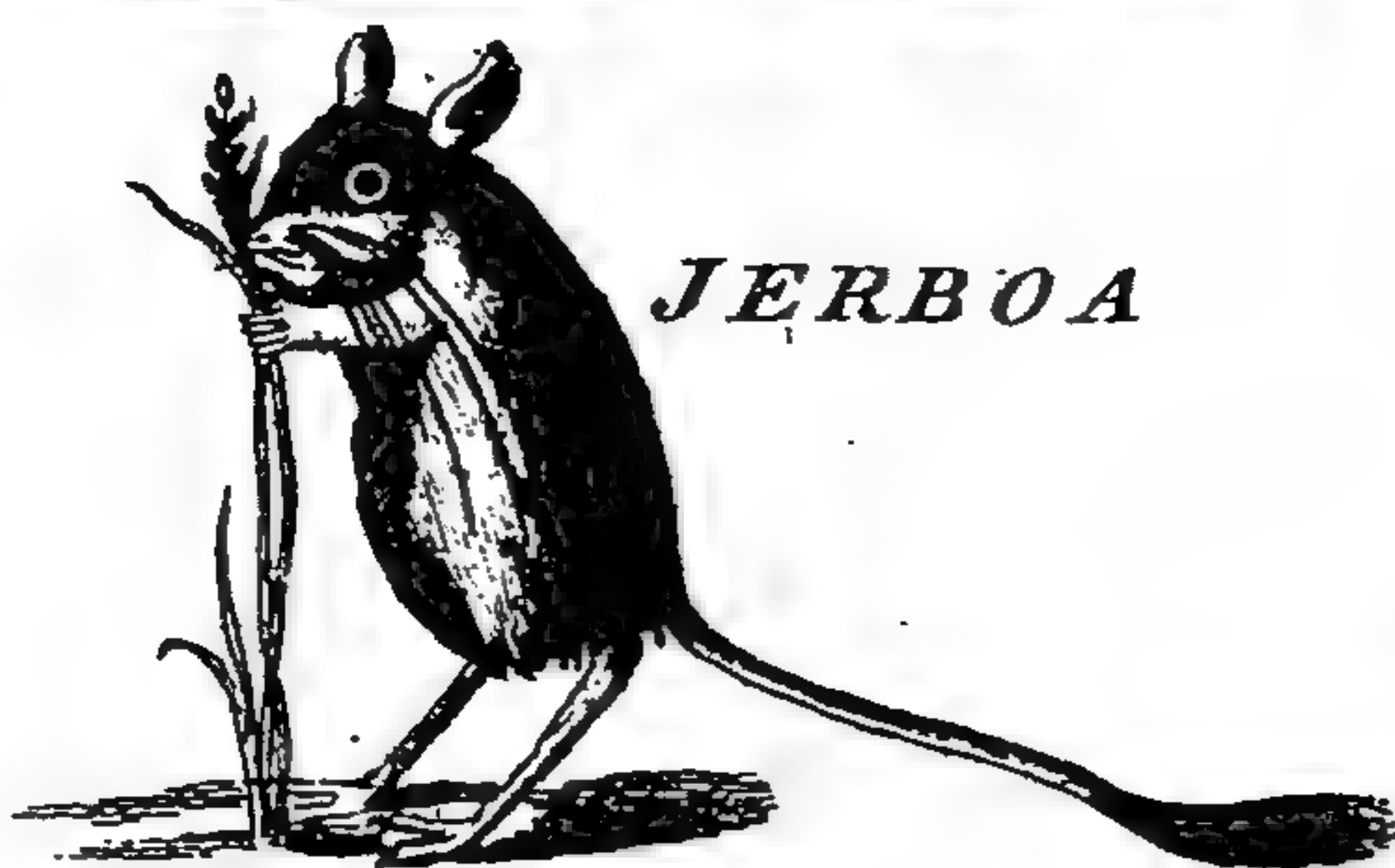
HYAENA



ARMADILLO



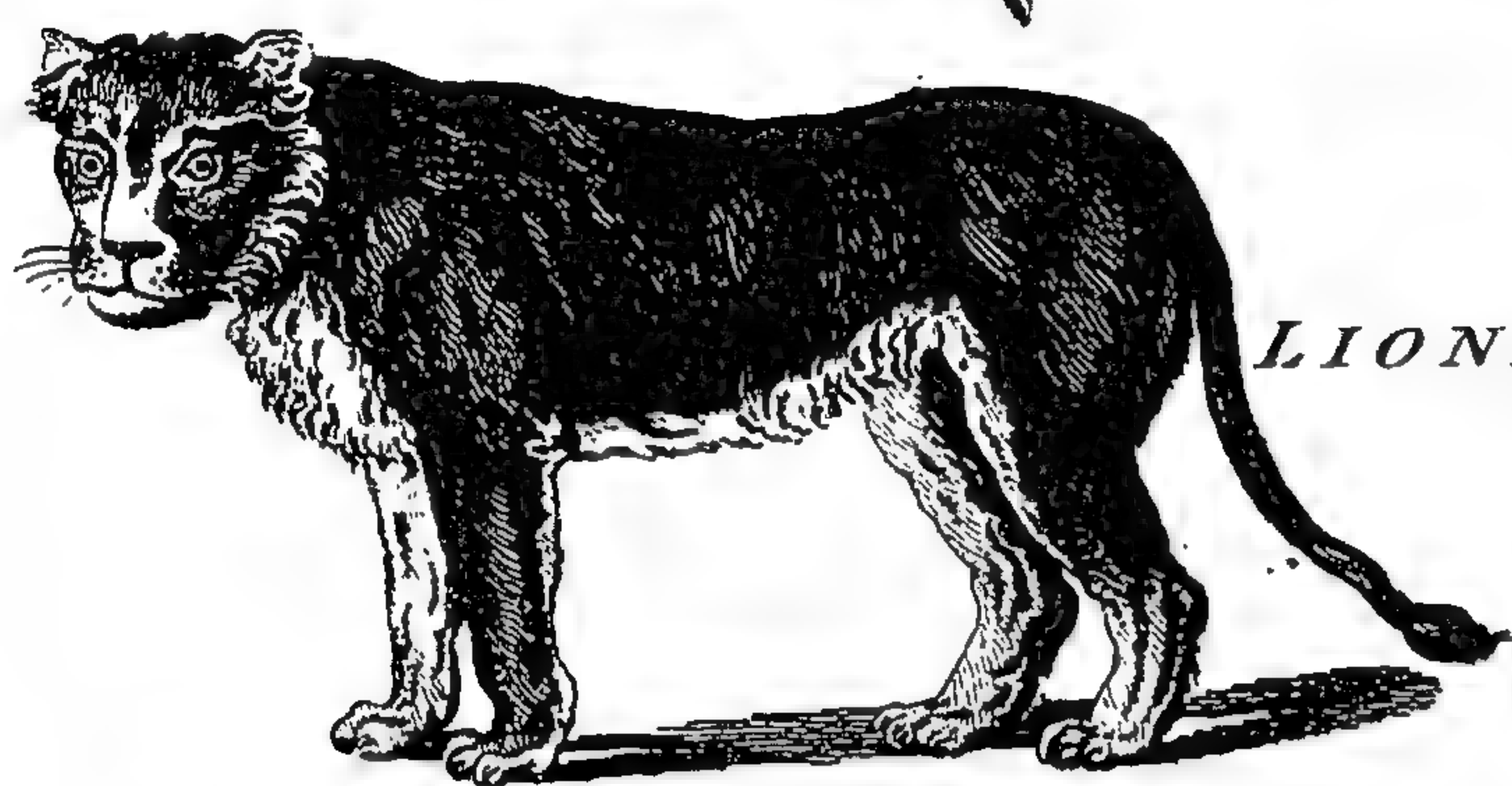
KANGUROO



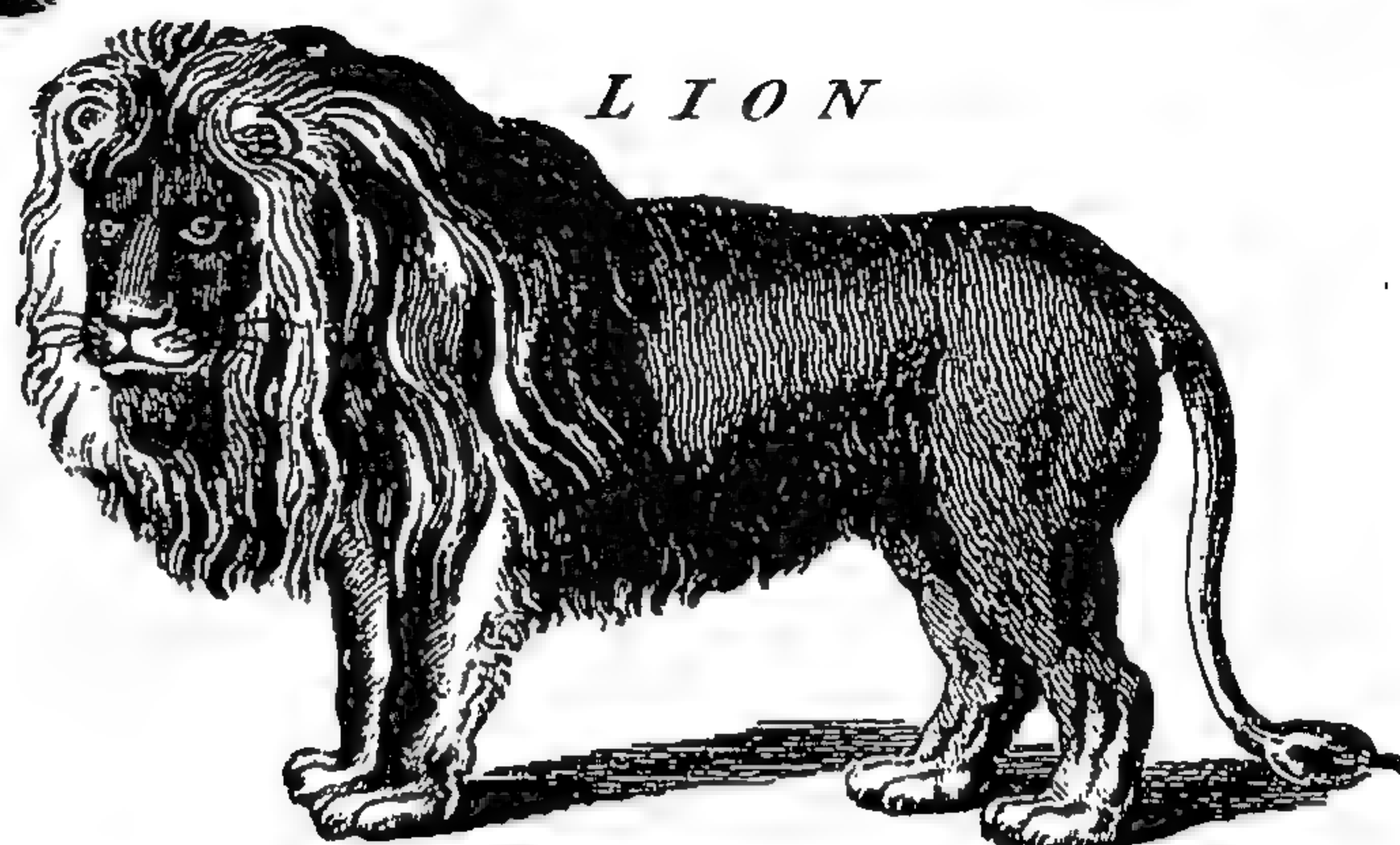
JERBOA



ICHNEUMON



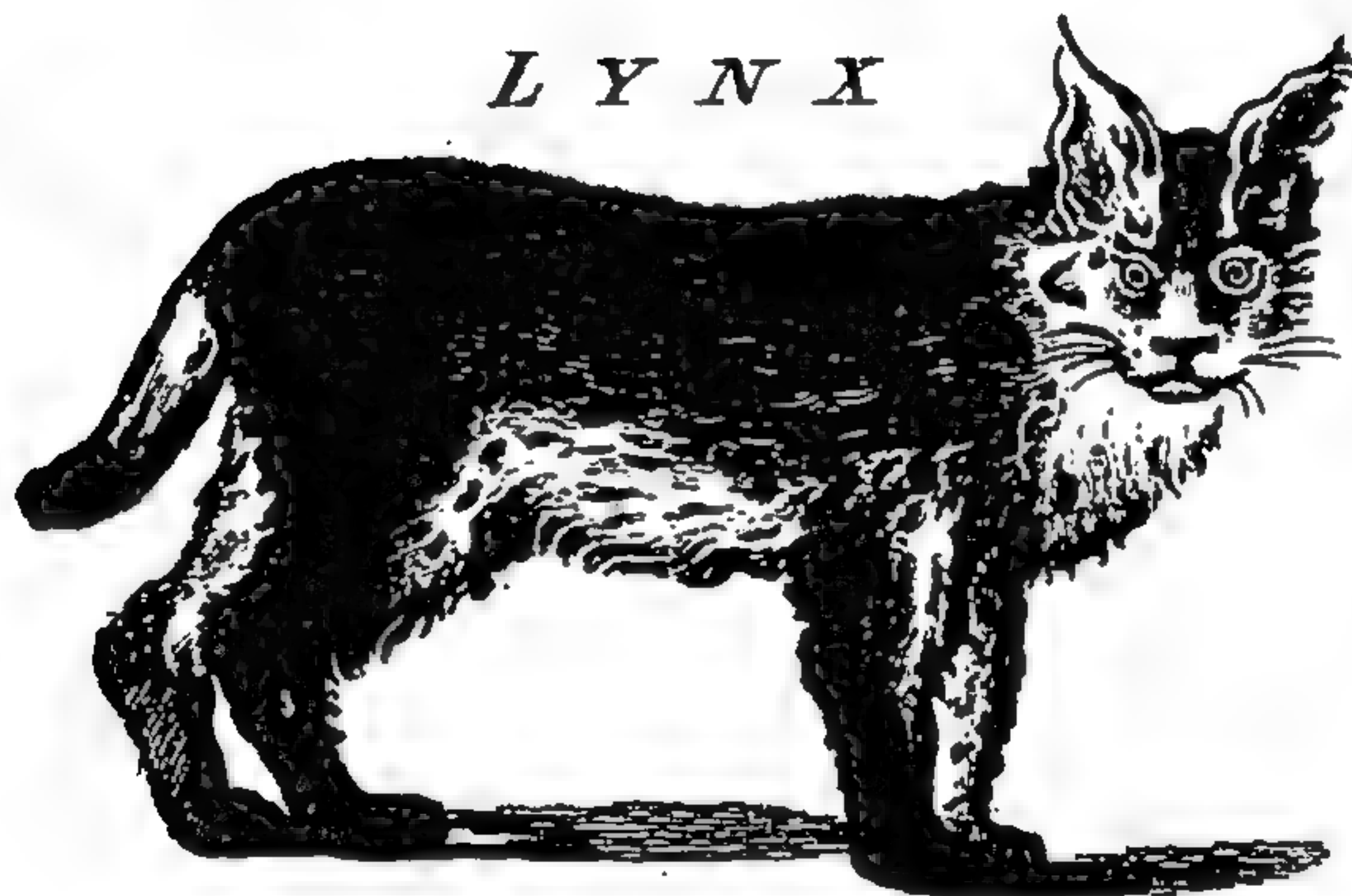
LIONESS



LION



MANTEGAR



LYNX



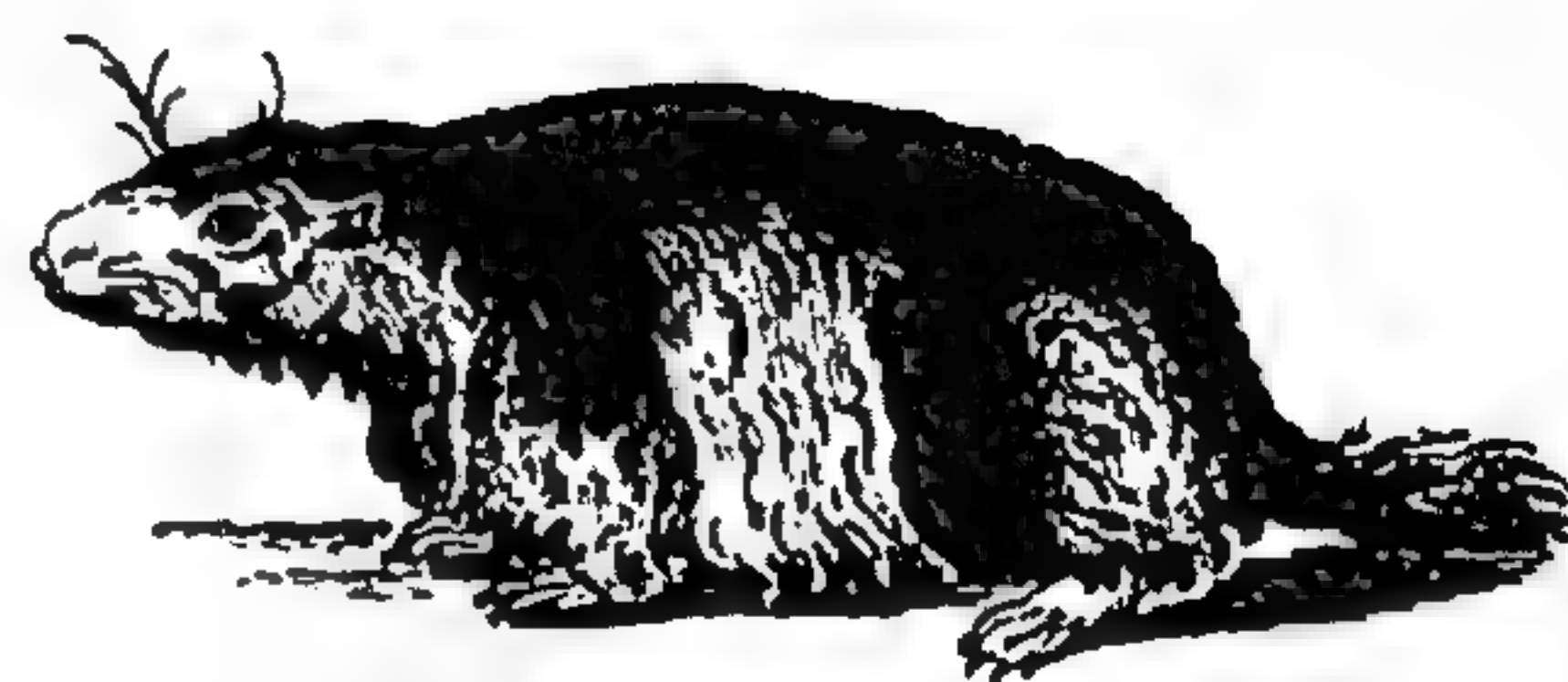
LORIS



MOLE



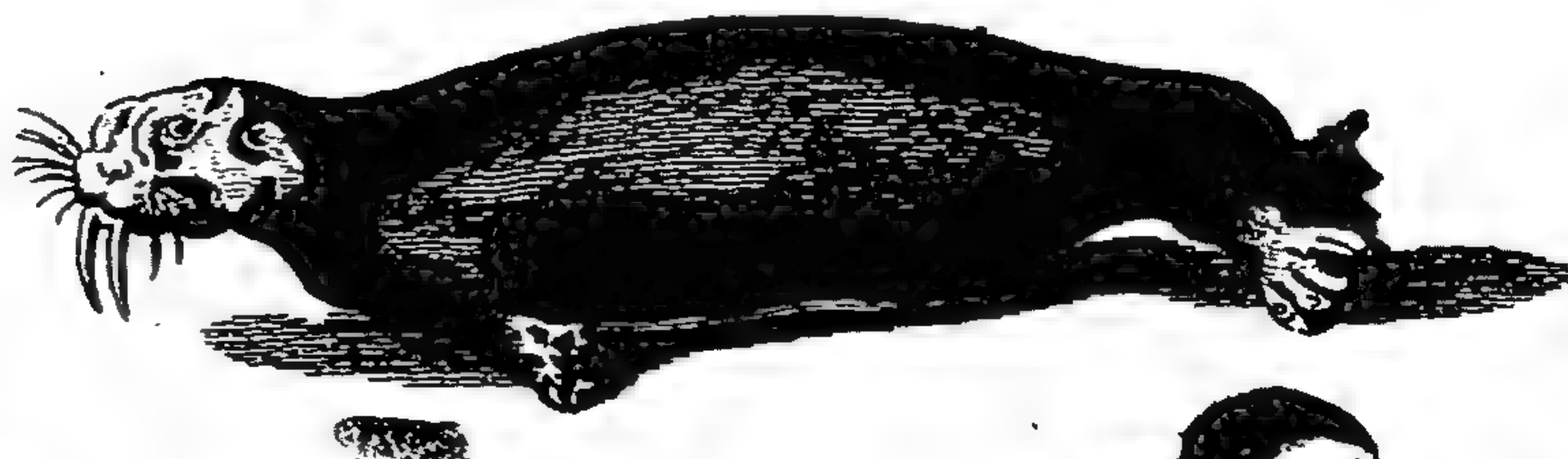
MARTIN



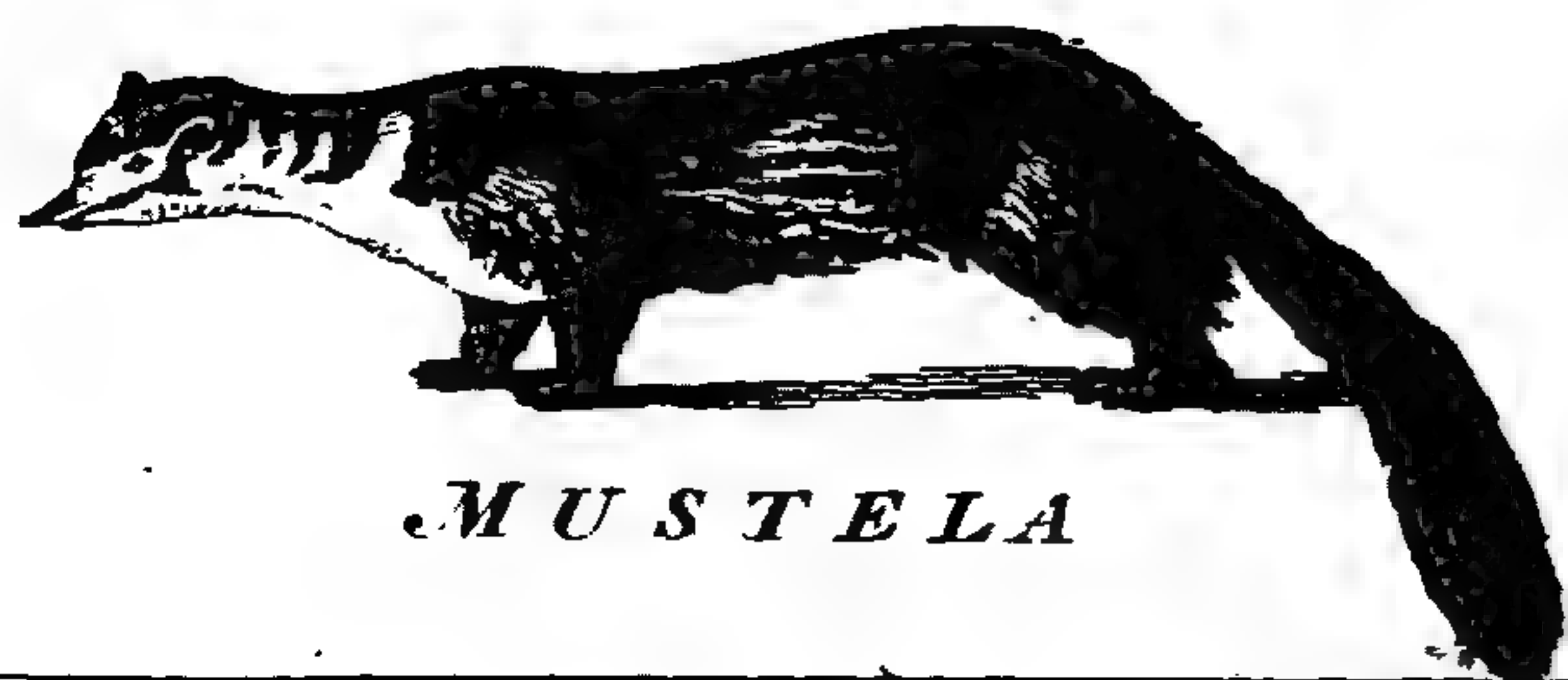
MARMOTTE



MONGOOSE



MORSE



MUSTELA



MOSCHIFERUM Animal



Long Arm'd  
MONKEY



rous herds that cover the rich meadows of the Lower-Guinea; they tear their prey in pieces both with their claws and teeth; and are always thin, though perpetually devouring. The negresses make collars of their reeth, to which they attribute certain virtues. These animals are taken in pit-falls, covered over with slight hurdles, on which a bait of flesh is placed. Their flesh is said to be well tasted, and as white as veal: their skins are very valuable, and are often brought into Europe.

The jaguar, or panther of America, resembles the two former, except in the disposition of its spots, and that its neck and head are rather streaked than spotted. These three animals have indeed but very slight differences. Mr. Buffon chiefly distinguishes them by the size.

#### The Hunting LEOPARD.

The face of this animal is slightly spotted, and its body is of a light tawny brown, marked with a great number of small round black spots; not in circles, but each distinct. Its tail is longer than the body, and of a reddish brown colour. It is about the size of a large greyhound, has a long body, narrow chest, and very long legs. It is a native of India, and is tamed and trained for the chase of antelopes. It is carried to the forest in a small kind of waggon, and is chained and hood-winked till it approaches the herd. It does not make its attack immediately as it is unchained, but winds along the ground, and endeavours to conceal itself till it gets a proper advantage, when it darts on the animals with surprizing swiftness. If it does not succeed in its first efforts, consisting of four or five leaps, it misses its prey; and, for that time, gives up the point, and readily returns to its master, having lost its breath, and finding itself unequal in speed.

#### NATURAL HISTORY of the OUNCE.

THE Ounce is considerably smaller than the panther, and seldom exceeds three feet and an half in length; but its hair is longer than that of the panther, and its tail still more so in proportion. The colour of the Ounce is rather inclining to a cream-colour, but rather whiter towards the belly than on the back: the hair on the belly is also longer than on the back. Its spots are disposed somewhat like those of the panther, except that on the haunches it has rather stripes than spots. This species is of a strong make, and has short legs and a short back. It is a native of Barbary, Persia, and China; and is an animal of a more gentle nature than most of the preceding. Like the last, it is used for the chase of antelopes, and even hares. It is not, like the leopard, conveyed in a waggon, but is carried on the crupper on horseback: it is as obedient as a setting-dog, returns at his master's call, and jumps behind him.

#### NATURAL HISTORY of the TIGER CAT.

THIS animal is called the Ocelot, by Mr. Buffon, and the Mexican ounce by Mr. Pennant. It is less than the ounce, but its skin is more beautifully variegated. It inhabits Mexico, the neighbourhood of Carthagena, and Brasil. It lives in the mountains, and is very voracious, but fearful of mankind. It preys on calves and different sorts of game. It lurks amidst the leaves of trees, and sometimes will extend itself along the boughs, as if dead, till the monkeys, tempted by their natural curiosity, approaching to examine it, become its prey. The fur is of a reddish colour, beautified with black spots, and streaks of different figures: the ears are striped across with black, but in other respects they resemble those of a cat. The colours however are not permanent, though minutely described by many naturalists, some of them having been seen that were entirely brown.

#### NATURAL HISTORY of the LYNX.

THE principal distinction between the Lynx and those of the panther kind, is in its tail, which is about half as long in proportion, and black at the extremity. Its fur is much longer, and the spots on the skin are tufted and irregular. Its ears are longer, and tipped with a black tuft of hair at the points. This animal does not exceed the ounce in size, but is rather stronger built, and has only twenty-eight teeth. It is an inhabitant of the hottest parts of South-America, and is a very fierce animal. Like the tiger, it plunges its head into the body of its prey, and sucks out the blood before it devours it. It makes a noise in the night like the howling of an hungry dog; but is a very cowardly animal, and easily put to flight, either by a shepherd's dog, or by a lighted torch, being much terrified at fire. It lies in ambush near the river side; and a singular combat sometimes happens between this animal and the crocodile. When the Lynx comes to the river to drink, the crocodile, which is always ready to surprize any animal that approaches, raises its head out of the water; the Lynx immediately strikes its claws into the only penetrable part of this dreadful reptile, which is the eyes; the crocodile instantly dives under the water, pulling his enemy after him, where they usually perish together.

#### NATURAL HISTORY of the COUGAR.

THIS animal is called the Red Tiger by Mr. Buffon, but it is extremely different from the tiger of the East. It is a native of the continent of America, from Canada to Brazil; and in South-America is called Puma, and mistaken for the lion. It is the scourge of the colonies in the hotter parts of America, and is fierce and ravenous to the highest degree. It swims over the broad rivers, and attacks the cattle even in inclosures. When pressed with hunger, it does not even spare mankind. But their fury is subdued by the rigour of the climate in North-America: the smallest cur, when accompanied by his master, will there make them seek for security by running up the trees; but then they are equally destructive to domestic animals, and are the greatest nuisance that the planter has. When they lay in wait for the moose or other deer, they lie close on the branch of a tree till the animal passes beneath, when they drop upon him, and immediately destroy him. Wolves are also the prey of this animal. The fur of the Cougar is soft, and esteemed among the Indians, who during the winter cover themselves with it; the flesh is eaten by them, and is said to be as white and as good as veal. The back, neck, rump, and sides of this animal is of a brownish red, mixed with dusky hairs, and the belly is whitish; the teeth are of a vast size, and the claws are white. It purrs like a cat, and has a tail about two feet eight inches long.

#### NATURAL HISTORY of the SIAGUSH.

THIS is a native of India, Persia, and Barbary, and resembles the lynx in size, in form, and in the singularity of being tufted at the tips of the ears. The upper-part of the body is of a very pale reddish brown; the tail rather darker; and the belly and breast whitish. The Siagush is often brought up tame, and used in the chase of lesser quadrupeds, and the larger sort of birds, which they surprize with great address. It is very fierce when provoked, and when it seizes its prey, it holds it fast in its mouth, and for some time lies motionless on it. This creature is said to attend the lion, and to feed on the remains of the prey which that animal leaves.

#### NATURAL HISTORY of the ANGORA CAT.

THIS animal has its name from the place it inhabits. It has long hair of a silvery whiteness, and silky texture; but it is remarkably long about the neck, where



where it forms a fine ruff: the hair on the tail is very long and spreading. These animals are in plenty in Angora; the same country which produces the fine haired-goat. After the first breed, they degenerate in our climate.

#### NATURAL HISTORY of the CATUS-PARDUS.

**T**HE Catus-Pardus, or Cat-a-Mountain is an American animal, two feet and a half in length from the nose to the root of the tail, and a foot and a half high, with a tail eight inches in length. He is extremely like a Cat except in the tail, which is much shorter in proportion to the rest of the body. Likewise the hair or fur is like that of a Cat, and of a reddish colour, only the belly and inside of the fore-legs have more of the white, and under the throat and lower jaw it is entirely white. The whole skin is beautified with black spots of different figures; for they are long on the back, and round on the belly and paws. On the ears there are black stripes, which run across, but in other respects they entirely resemble those of a Cat. The whiskers are more short in proportion than those of a Cat; and there is no long hair on the eye-brows and checks as we see in Cats.

#### NATURAL HISTORY of the CARCAJOU.

**T**HIS animal, mentioned in a former chapter, is a sort of a Cat, whose tail is so long that it wraps several times round its body, which is of a reddish brown colour. He is an enemy to the moose deer, and when he can overtake one he leaps upon his neck, which he encircles with his long tail, and then opens the jugular vein. The deer has no other way to escape from him than by leaping into the water. Generally this animal, who has no quick smell, takes three foxes along with him, which soon find out the moose deer, and harrafs him in such a manner, that they force him to the place where the Carcajou waits for him; and after the prey is killed, the foxes come in for their share, as Pere Charlevoix affirms. The Carcajou sometimes lies in wait on the branch of a tree, till the moose deer comes within his reach; and then he leaps upon him, and kills him as before.

There is another animal called the Carcajou, which is of a blackish colour. The head is longer in proportion to the size, and the tail very short. It has also short legs, inasmuch, that it creeps upon the snow rather than walks, and is the slowest of all voracious animals. However, it is a fierce cunning creature; he will sit upon trees to watch the motion of the deer, and when one comes within his reach, he jumps down upon them, fastening on the shoulders, which he tears in an extraordinary manner, and the deer soon falls down with loss of blood.

#### NATURAL HISTORY of the SERVAL.

**T**HIS is a native of Malabar, and resembles the panther in its spots, but the lynx in size, form, and the length of its tail. It is fierce and untameable, and lives in trees, where it breeds, and seldom descends on the ground. It leaps from tree to tree with great agility, and by the natives of Malabar is called the Marapute. By the Portuguese it is called the Serval, and Mr. Buffon gives it the same appellation. Its fur is of a whitish yellow, with dusky spots all over it. It has a very piercing ferocious look.

From what has been said of this rapacious tribe, a similitude of manners and dispositions may be perceived from the lion to the cat; the similitude of their internal conformation is still more exact, and the whole race may be considered as the most formidable enemies of mankind.

#### NATURAL HISTORY of the BLACK BEAR.

**T**HERE are three different kinds of the Bear, the Brown Bear of the Alps, the Black Bear of North America, which is smaller, and the great Greenland, or White Bear. Though different in form and disposition, they are doubtless of the same original, and owe their principal variations to food and climate. The Bears of America are small and black, and feed only upon vegetables, particularly maize and potatoes, of which they are remarkably greedy; Du Pratz says the Bear will even reject animal food, though pressed by hunger; but Dr. Goldsmith affirms the contrary, declaring he has often seen the young ones, which are brought over to London, prefer flesh to every kind of vegetable aliment. These animals strike with their fore-feet like a cat, and very seldom use their mouths in fighting, but seize the assailant with their paws, and, pressing him against their breast, almost squeeze him to death. When the females are with young, they retire into the most secret places; lest, when they bring forth, the males should destroy their cubs: their retreat during their pregnancy is so impenetrable that out of the several hundred Bears that are killed in America during winter, (which is their breeding season) hardly a single female is found among them. They bring forth two, and sometimes three at a time; and though the cubs are deformed, they are not so shapeless as to be licked into form, as the ancients pretended. The flesh of a Bear in autumn, when they are become exceedingly fat, by feeding on acorns and other mast, is most delicate food; and that of the cubs is still more excellent; but the paws of the old Bears are reckoned the most delicious morsel. Their fat also, which preserves a certain degree of fluidity, is very white and sweet.

After having fattened himself to the greatest degree, the Bear retires to its den, where he continues forty or fifty days in total inactivity, and abstinence from food; but, at the end of that time, he is forced from his retreat by hunger, and when he comes forth to seek for fresh nourishment, he seems to have slept all his flesh away. It is a vulgar error, that during this time, they live by sucking their paws; they rather subsist upon the exuberance of their former flesh, and only feel the call of appetite, when the fat which they had acquired in summer, becomes almost exhausted.

Their retreats are either in the cliffs of rocks, in the deepest recesses of the thickest woods, or in the hollows of decayed trees, which they ascend and descend with surprising agility. Multitudes of Bears are annually killed in America for the flesh and skins, both of which are valuable, but the latter makes a considerable article of commerce.

The Bear has a long head, small eyes, and short ears, rounded at the top. Its body is covered with very long and shaggy hair. Its limbs are strong, thick, and clumsy; it has a short tail, and large feet. Besides the black, brown, and white Bears, there are some on the confines of Russia, which are black mixed with white hairs, and are called by the Germans silver-bar.

#### The BROWN BEAR.

The Brown Bear is not only savage but solitary; it is sometimes carnivorous, and will destroy cattle, and eat carrion; but the general food of this and the other varieties, is roots, fruits, and vegetables: it will rob the fields of pease, and pluck up great quantities of them when they are ripe: it will afterwards beat them out of the husks on some hard place, eat them, and carry away the straw. In the winter it will also break into the farmer's yard, and make great havock among his oats.

The voice of the Bear is a kind of growl, and though, when tamed, it appears gentle and placid to its master, yet it should be cautiously managed, as it is often capricious, treacherous, and revengeful. This animal, though in appearance extremely awkward and stupid, is capable of receiving some instruction. There are very few who have not seen it dance upon its hind feet; though its air and motions are so ungraceful, that a bad performer

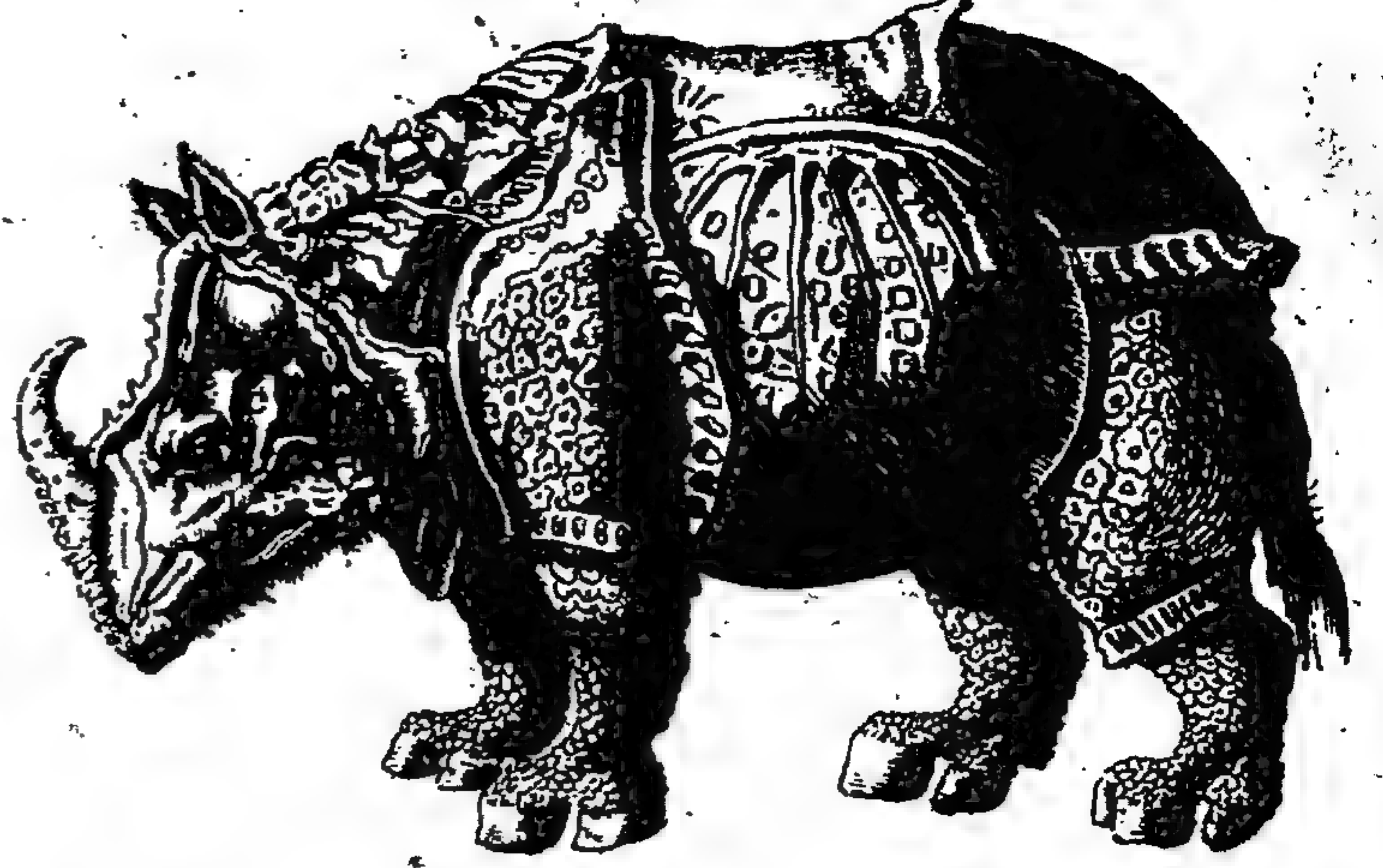


# QUADRUPEDS

THE CAT A MOUNTAIN



THE RHINOCEROS



THE GULO



THE BOAR



THE OTTER



THE JACKALL



THE WOLF



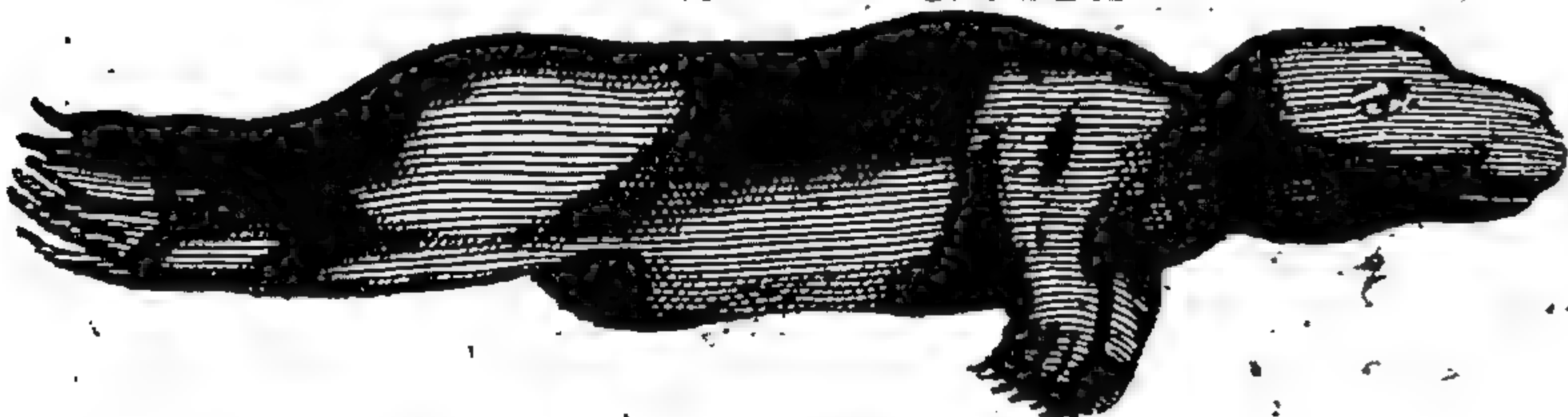
THE CAT



THE SIBERIAN FOX



THE SEA CALF



THE IBEX



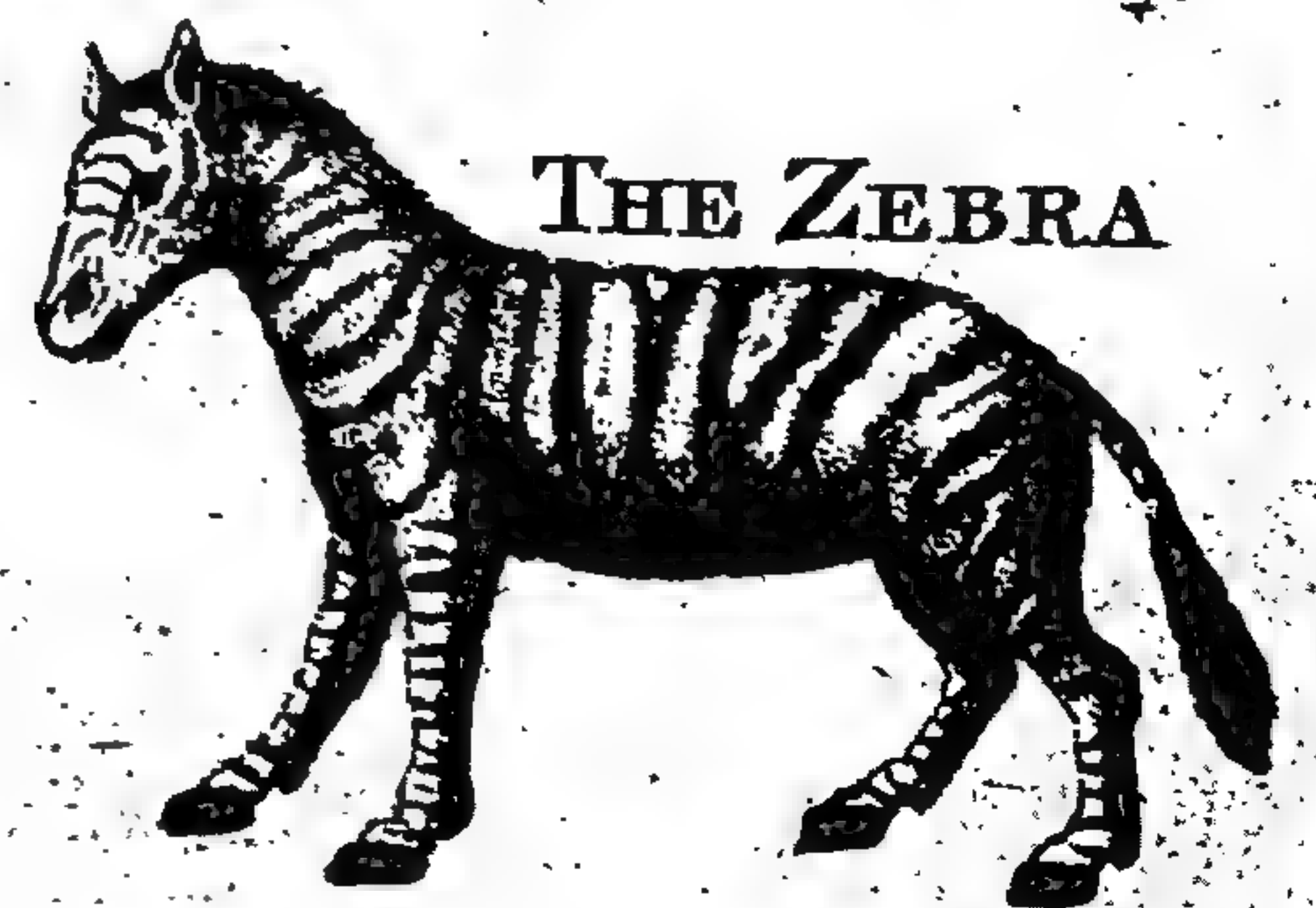
THE SEA HORSE



THE HORSE



THE ZEBRA





performer at a ball, is said proverbially to dance like a bear. It is taught to perform in this manner, by setting it upon hot plates of iron, and playing to it while it is in this uneasy situation.

When come to maturity the Bear can never be tamed; but notwithstanding its fierceness, the natives in those countries where it inhabits, hunt it, with great alacrity. The most general and least dangerous method of taking it is thus: they mix brandy with honey, of which it is extremely fond, and laying it in the hollow of trees, the animal finds it, devours it, and becomes intoxicated. In Canada, where Black Bears are very numerous, and where their dens are made in trees, which are hollow towards the top, they are taken by setting fire to their retreats, which are frequently from twenty to thirty feet from the ground. The old Bear generally ventures first out of its den, and is shot by the hunters, and the young ones, as they descend, are caught in a noose.

#### THE WHITE OR POLAR BEAR.

The White Bear grows to a vast size, and as the lion is the tyrant of an African forest, so the Bear is the undisputed master of the icy mountains in Greenland and Spitzbergen. When our mariners land in unfrequented places, upon any of those shores, the White Bears come down to view them: they approach slowly, as if they were undetermined whether to advance or retreat, being naturally a timid animal, but it is encouraged by success. When shot at, or wounded, they endeavour to fly, but if they find themselves incapable of flight, they make a fierce and vigorous resistance till they die. These animals live upon fish, seals, and the carcases of whales; they also feed on human bodies, which they greedily disinter. They delight in human blood, and are so daring as to attack companies of armed men, and even to board small vessels. In the summer, the White Bears reside on an island of ice, or pass from one island to another. They are good swimmers, and dive with great agility; but sometimes a battle ensues between a Bear and a morse or a whale, in which the latter is generally victorious, as being more expert in its own element. If the Bear, however, should be fortunate enough to find a young whale, he is sufficiently repaid for the danger he incurs of meeting with the parent.

The affection between the female White Bears and their young is so strong, that they would rather die than desert each other. This animal is confined to the coldest part of the globe; the frigid islands seem entirely adapted to its nature; for it does not appear from any authority that it is met with farther south than Newfoundland. Such as have appeared in other parts have been involuntarily carried there on floating islands of ice; so that the countries of Norway and Iceland are acquainted with them only by accident.

The flesh of this animal is white, and has the taste of mutton: its fat is melted for train-oil, and that extracted from the feet is used in medicine. The liver is very unwholesome; three of Barentz's sailors having eat some of it boiled, fell dangerously ill. One of this species was shewn in England a few years ago. It roared loud, was very furious, continually in motion, and seemed very uneasy, except when water was poured over him to cool him.

It often happens, that when a Greenlander and his wife are paddling out at sea, by coming too near an ice-boat, a White Bear unexpectedly jumps into their boat, and if he does not overfet it, sits calmly where he first came down, and like a passenger suffers himself to be rowed along. It is probable the poor little Greenlander is not very fond of his new guest, however he makes a virtue of necessity, and hospitably rows him ashore.

#### NATURAL HISTORY of the WOLVERENE or GLUTTON.

THIS animal is called the Wolverine by the factory at Hudson's Bay, but by the natives, Quickhatch. It has a black sharp-pointed visage, and short round ears, almost covered with the hair. On the head, back

No. 9.

and belly, the hair is reddish, with black tips, so that at the first view those parts appear quite black; the sides are of a yellowish brown: on the throat is a white spot, and on the breast a white mark in the form of a crescent: the legs are of a deep black, and thick, short, and strong. This animal rests on its foot like the bear, as far as the first joint of the leg. Its tail is cloathed with long coarse hair, reddish at the base, and black at the end. The length of this creature is twenty-eight inches from nose to tail, and the whole body is covered with very long and thick hair, varying in colour according to the season. It is an inhabitant of Hudson's Bay and Canada, and is found under the name of the Glutton in the northern parts of Europe and Asia, being a native of the most rigorous climates. It is a most voracious animal, but so slow of foot, that it is obliged to take its prey by surprise. It often lurks in trees, and falls on the quadrupeds that pass under. It will fasten on the shoulders of the horse, elk, or stag, and continue eating a hole into its body, till the animal falls down with the pain. It searches for the traps intended for fables and other animals, and often is beforehand with the huntsman, who sustains great losses by the Glutton.

It is very fierce in a wild state, and is a terror to both the wolf and the bear. The skin is sold in Siberia for five or six shillings; and it is still more valuable in Kamtschatka, where the women embellish their hair with its white paws, which they esteem a great ornament. The fur is in great estimation in Europe; that of the north of Europe and Asia is much finer, blacker, and more glossy than that of the American kind.

#### NATURAL HISTORY of the RACCOON.

THIS animal is about the size of a small badger. Its body is short and bulky; it has a sharp-pointed black nose, short ears, and eyes surrounded with two broad patches of black; the upper jaw is longer than the under; the teeth resemble those of a dog; the tail is thick, but tapering, and regularly annulated with black; the fore-feet are shorter than the hinder, and both are armed with five sharp claws. It inhabits the warm and temperate parts of America, and is also found on the mountains of Jamaica. It is easily tamed, and is then very good-natured and sportive, but as unlucky as a monkey, and perpetually in motion. Like the squirrel, it holds its foods in its paws whilst eating; in this respect it differs from the monkey-kind, which use only one hand upon these occasions, but the Raccoon and the squirrel use both. Tho' this animal is short and bulky, it is extremely active; with the assistance of its pointed claws it climbs nimbly up the trees; it runs upon the trunk with the same facility that it moves upon the plain; and sports upon the branches of the trees with ease, swiftness, and security. It is very curious and inquisitive, examining every thing with its paws. It is extravagantly fond of sweet things, and strong liquors, and will get excessively intoxicated. Like the fox, the Raccoon is very destructive to poultry, and, like that animal, has a large portion of cunning. It will eat any kind of fruit, green corn, &c. and, if near the coast, will feed on oysters at low water. It will watch the opening of the oyster, and snatch out the fish with its claw; but sometimes the shell closes upon its paw, and keeps it fast till the coming in of the tide, by which means the Raccoon is drowned. The fur of this animal is next to that of the beaver, and is excellent for making hats. There is one very remarkable peculiarity in the Raccoon. In drinking it both sucks up its liquor like the horse, and laps it like the dog.

#### NATURAL HISTORY of the BADGER.

THE legs of this animal appear very short, and the body almost to touch the ground. It has small eyes, short round ears, and a short thick neck; the nose, chin, lower sides of the cheeks, and the middle of the forehead, are white; it is covered with long coarse hair like bristles, which makes the animal's legs seem much shorter



shorter than they really are. The usual length of the Badger is two feet four inches, exclusive of the tail, which is about four inches. The hair on the body is of three colours, the bottoms are of a dirty yellowish white, the middle black, and the ends grey; whence arose the proverb, "As grey as a badger." It has a gland under its tail, which exudes a substance of a foetid smell: this seems peculiar to the hyæna and the badger. It is a solitary stupid animal, and, remote from man, digs a deep hole with great assiduity. It steals out at night to find subsistence, but seldom quits its retreat in the day-time, choosing, it is imagined, to avoid the light.

The fox, not being expert at digging into the earth, or not choosing to take much trouble, cunningly takes possession of that which has been quitted by the Badger, and, some say, forces it from its retreat, by offensive discharges at the mouth of the Badger's hole.

The Badger is accused of destroying lambs and rabbits; but there appears to be no foundation for the charge: though furnished with strong teeth, as if it was formed for rapine, it is found to be an inoffensive animal, feeding upon roots, fruits, grubs, insects, and frogs. Nature having denied this animal the speed and activity requisite to escape its enemies, hath supplied it with such weapons of offence, that very few creatures would hazard the attacking it: when pursued, it soon comes

to bay, and combats with desperate resolution. It is an indolent animal, and sleeps the greatest part of its time; it is therefore always found very fat. The female brings forth but once a year, which is in summer, and generally produces four or five at a time.

These animals are hunted in the winter nights, and when taken, their hind quarters are sometimes made into hams, which are said to be good eating. The skin, with the hair on, is used for pistol-furniture, and of the hair, brushes are made to soften shades in painting. Badgers inhabit most parts of Europe, as far north as Norway and Russia, and the desert beyond Orenburg, in the Russian Asiatic dominions, north of the Caspian sea. They are also found in China, and are often seen in the butchers shops in Pekin, being much admired by the Chinese. The parts of England in which they now chiefly abound, are Essex, Suffex, and some of the mid-land counties.

The way to catch Badgers is with a springe, or steel trap, or to dig a pit across their path, five feet deep, and four feet long, making it narrow at the top and bottom, and wide in the middle. This must be covered with small sticks and leaves, that the Badger may not suspect any design, and that he may fall in when he comes upon it. Some hunt them into their holes in a moon-shine night, and then dig them out.

## C H A P. X.

### The NATURAL HISTORY of QUADRUPEDS of the WEASEL Kind.

*Containing a descriptive Account of the WEASEL; the STOAT, or ERMINE; the POLE-CAT; the FERRET; the MARTIN; the SABLE; the GUINEA WEASEL; the ICHNEUMON; the SQUASH; the STIFLING WEASEL; the CIVET; the OTTER; the CAVY, &c.*

**T**HE Weasel kind may be distinguished from other carnivorous animals, by their long and slender bodies, which enable them, like worms, to wind into very small openings after their prey. They have indeed received the appellation of vermin, from their resembling the worm in this particular. In the formation and disposition of their claws, these animals differ from all those of the cat kind, as they can neither draw them in nor extend them, as cats are known to do. They are clothed with fur rather than with hair, and therein differ from the dog kind. All of this kind, however, are more distinctly marked by their actions and dispositions than by their external forms. They are all cruel, cowardly, and voracious, subsisting only by theft, and principally protected by their smallness and insignificance. Having short legs, they are all slow in pursuit, and obtain a support by cunning, patience, and assiduity. Their prey being precarious, they often live a long time without food; but when they meet with success, they destroy all about them before they begin to feed, and suck the blood of every animal before they regale upon its flesh. The Weasel is the best known of any of this kind, and will serve as a model for all the rest; for the particulars in which they differ from this little animal are not very considerable.

#### NATURAL HISTORY of the WEASEL.

**T**HE Weasel is the smallest of this numerous tribe, the length of the head and body not exceeding six or seven inches. The tail is about two inches and a half long, and ends in a point. The length of this animal, however, appears very great when compared with its height, which does not exceed an inch and a half. The eyes are small and black; the ears are large, and the lower parts of them doubled in. The head, tail, legs and feet, and the upper part of the body, are of a very pale tawny brown; the lower

part of the body, from the chin to the tail, is white; but on each jaw is a spot of brown, beneath the corners of the mouth. It has whiskers, and thirty-two teeth, which are two more than any of the cat kind have, and they seem well adapted both for chewing and tearing.

Though a very diminutive animal, the Weasel is a very formidable enemy to those that are much larger. Like the rest of its kind, it is very destructive to rabbits, poultry, and young birds, and is also a great devourer of eggs. It is held in different estimation in different parts of the world. It is a most noxious animal in those places where lambs are bred; but where agriculture is chiefly followed, the Weasel is considered as a friend, that destroys such vermin as live chiefly upon corn. The Weasel frequents out-houses, barns and graineries; where, in order to make some atonement for its depredations among our poultry, it presently clears its haunts from rats and mice, being a greater enemy to them than even the cat itself.

This is an untameable and untractable creature. When kept in a cage, either for amusement or inspection, it will not touch its victuals if any person looks on. It seems continually agitated, and so terrified at the sight of mankind, that, if not permitted to hide itself from their view, it will even expire. It must therefore have a sufficient quantity of wool or hay in its cage, under which it may conceal itself and whatever it has to eat. It passes three parts of the day in sleeping, and employs the night in exercise and eating.

At the approach of evening, this animal, in its wild state, is seen stealing from its hole, and creeping about the farmer's yard in search of prey. If it enters the place where poultry are kept, it never attacks the old cocks and hens, but aims immediately at the young ones. It does not eat its prey on the spot; but, after killing it, carries it off to its young or its retreat. This creature is remarkably active, and, in a confined place, scarce any animal can escape it. It will run up the sides of walls with such facility, that few places are



are secure from it; and its body is so slender, that there is hardly a hole but what is pervious to it. In winter this animal chiefly confines itself to barns and farm-yards; all this season it makes war upon rats and mice: it creeps also into pigeon-holes, and destroys the young. It ventures farther from the house in summer, and particularly into those places where the rat goes before it. It is found principally in the lower grounds, by the side of waters, and near mills, and frequently conceals its young in the hollow of a tree.

The female makes an excellent bed for her little ones, of which she generally brings forth four or five at a time: like those of the dog kind, all these animals bring forth their young blind; but they soon acquire sufficient strength to accompany the dam in her excursions, and to be accomplices in her petty thefts. This animal, as well as all those of its kind, has a very strong offensive smell, proceeding from the foetid glands beneath the tail. The Weasel smells stronger in summer than in winter, and still more abominably when irritated or pursued. It has no cry, except when it is struck, and then it expresses its resentment and pain by a kind of squeak.

#### NATURAL HISTORY of the STOAT or ERMINE.

THE difference between the Stoat and weasel is so very inconsiderable, that many naturalists, and among the rest Linnæus, have confounded the two kinds together: the Stoat or Ermine, however, differs from the weasel in size, being usually nine or ten inches long, and the former seldom exceeding six or seven. The tail of the Ermine is always tipped with black, has more hair, and is longer in proportion to the body. This animal indeed, like the weasel, is of a lightish brown, and, like the weasel in the northern parts of Europe, changes its colour in winter, and becomes white; but still the weasel may be distinguished from the Ermine by the tip of its tail, which is always black.

The Ermine is remarkable for the softness, the closeness, and the warmth of its fur, which is the most valuable of any hitherto known. The skins and tails are a very valuable article of commerce in Norway, Lapland, Russia, and other countries, where they are found in prodigious numbers. The Stoat is sometimes found white in Great-Britain, but not often; and then it is called a White Weasel. The Ermine is observed to begin to change its colour from brown to white in November, and to resume the brown the beginning of March.

It is not easy to account for the remarkable warmth of the furs of northern quadrupeds. Nature, it may be said, fits them thus for the climate; and, like an indulgent mother, when she exposes them to the severest rigours of winter, supplies them with a covering, to shield them from its inclemency: but how does nature furnish them in this manner? It is observable in many animals, that a thin sparing diet produces a quantity of hair: children, dogs, and horses, that have been ill fed, are more hairy than those whose food has been more plentiful. This may therefore be one cause that, in winter, the animals of the north are more hairy than those of the milder climates. The whole country is then covered with deep snow, and what the Ermine can procure must be scanty and precarious. The severity of the cold also contracts the pores of the skin, and the hair naturally takes the shape of the aperture through which it grows, as wire is made smaller by being drawn through a smaller orifice. It is however certain, that most of the animals of the arctic climates have garments adapted to the winter as well as to the summer.

This animal resembles the weasel in its habits, and its choice of food; but does not frequent houses. Its haunts are woods and hedges, especially such as border on brooks or rivers. Its agility is equal to that of the weasel, and its scent is equally foetid.

#### NATURAL HISTORY of the POLE-CAT.

THE Pole-cat is larger than the weasel or the ermine, being about seventeen inches in length, exclusive of the tail, which is six. It is a deep chocolate colour, has a space of white round the mouth; the ears are short, rounded, and tipped with white. It so nearly resembles the ferret in form, that many have supposed them to be the same animal. Like the whole genus, it is long and slender, nimble and active, and will creep up the sides of walls with great agility. Like the rest of the tribe, the Pole-cat is very destructive to poultry of all kinds; it also makes a common practice of robbing the dairy, and is a formidable enemy to pigeons; but the rabbit seems to be its favourite prey: a single Pole-cat is almost sufficient to destroy a whole warren, for it has such an insatiable thirst for blood, that it kills much more than it can devour. The female brings forth about five or six at a time.

Warreners assert that the Pole-cat will mix with the ferret, and that they frequently procure an intercourse between these animals, to improve the breed of the latter; which becomes less eager after rabbits, and consequently less useful, by being long confined. Mr. Buffon denies that the ferret will admit the Pole-cat, yet gives a variety under the name of the Ferret Pole-cat, which has the appearance of being a spurious offspring. In many respects the ferret agrees with the Pole-cat, particularly in its thirst after the blood of rabbits. When alive, the smell of the Pole-cat is rank and disagreeable even to a proverb; the skin is nevertheless dressed with the hair on, and used for tippets, &c. like other furs.

#### NATURAL HISTORY of the FERRET.

THIS animal is a kind of domestic in Europe. It is a native of Africa in its wild state, from whence it was originally brought into Spain, in order to free that country from the multitudes of rabbits with which it was over-run; and from thence the rest of Europe was supplied with it. It has a very sharp nose, red and fiery eyes, and round ears. The colour of the body is a pale yellow, but it is also found of all the colours of the weasel kind, white, black, brown, and party-coloured. It also resembles the weasel in the slenderness of its body and the shortness of its legs. It is a lively active animal, and the natural enemy of rabbits; it sucks the blood of its prey, but very seldom tears it. Ferrets breed in our climate, and bring from five to nine at a time; but they are apt to degenerate and lose their savage nature, till an intercourse can be procured between the Ferret and the pole-cat, which in some degree restores the former to its natural ferocity. The Ferret has the same disagreeable smell as the pole-cat.

The Ferret is not at present to be found in Great-Britain, except in its domestic state; and it is kept tame entirely for the purposes of the warren. The chief use of a Ferret is to enter the holes of the rabbits, and drive them into the nets that are prepared for them at the mouth. For this purpose it is muzzled, or, instead of driving the animal out, it would only kill it and suck its blood: but, by this contrivance, the rabbit escapes from the Ferret, and precipitately runs to the mouth of the hole, where it is entangled in the net provided for that purpose. Sometimes indeed it happens that the Ferret disengages itself of its muzzle, when it is usually lost, unless it be dug out; for, finding all its wants supplied in the warren, he continues there during summer, and in the winter perishes with cold.

These animals are usually kept in boxes, like rabbit-hutches, and are furnished with wool, of which they make themselves a warm bed to defend them from the rigour of the climate. The Ferret is an useful, but a disagreeable and offensive animal. Its scent is foetid, and its nature voracious: it is tame without any attachment, and has so strong an appetite for blood, that it has been known to kill infants in the cradle. It is easily



easily irritated, and then its smell is uncommonly offensive, and its bite is not to be cured but with great difficulty.

#### NATURAL HISTORY of the MARTIN.

**T**HE Martin differs from the pole-cat, in being about four or five inches longer; its tail is also longer in proportion, and more bushy at the end. It is a beautiful little animal; its head is small and elegantly formed; its eyes are lively; and its colours are elegant: the back, sides, and tail, are covered with a fine thick down, with long hair intermixed; the bottom is ash-coloured; the middle of a bright chestnut colour, and the tips black; the head is of a reddish brown; the throat and breast are white; the belly of the same colour with the back, but rather paler; the hair of the tail is very long, especially at the top, where it appears thicker than near the insertion. But these animals vary in their colours, inclining more or less to ash-colour, according to their ages or the seasons of the year.

All the motions of the Martin display grace as well as agility: it is easily tamed, and when taken young is extremely playful, being continually in good humour. If it happens to get loose, it is not so strongly attached to its master, but it will take the advantage of its liberty, and retire to its proper haunts. It makes terrible havock among poultry, game, &c. and will destroy rats, mice, and moles. In this country it inhabits woods, and makes its bed in the hollow of trees.

The scent of this animal, instead of being offensive, is considered as a most pleasing perfume. The skin of the Martin is a valuable fur, and is much used for linings to the gowns of magistrates.

There is a variety of this animal, called the yellow-breasted Martin, which differs from the former only in having a yellow breast; the breast of the other being white. It inhabits large forests, especially those of pines, and its prey is the same as the former, but its fur is much more valuable.

#### NATURAL HISTORY of the SABLE.

**T**HE sable resembles the martin both in form and size, and the weasel in the number of its teeth; the martin having thirty-eight teeth, and the weasel but thirty-four; therefore, in this respect, the sable seems to make the shade between these two animals. It has long whiskers, rounded ears, large feet, white claws, and a long bushy tail. The skin of the sable is the most coveted, and held in the highest esteem of any of the furs of this tribe of animals. It is of a brownish black, and the darkest is the most valuable: a single skin being often sold for ten or fifteen pounds. But the fur, which is so valuable, is not always the same. Some of these species are of a dark brown all over the body, except the ears and the throat, where the hair is yellowish; and there are instances of their being found of a snowy whiteness. The sable resembles the rest of the weasel kind in vivacity and agility, in sleeping by day, and searching for their prey by night, and in the disagreeable odour by which that race is chiefly characterized. These animals inhabit Siberia and Kamtschatka, and some few of them are found in Lapland. They usually live in holes in the earth, or beneath the roots of trees: and sometimes, like the martin, they form their nests in the trees, and will skip from one to the other with great agility. They bring forth about the end of March, or the beginning of April, and produce from three to five at a time, which they suckle about a month.

These animals are hunted in the winter for their skins, as they are only then in season. In Siberia, the hunting of the sable chiefly falls to the lot of the condemned criminals, who are sent from Russia into those dreary and inhospitable forests; and thus the luxuries and ornaments of the vain, are obtained by the miseries of the wretched. These criminals are obliged to furnish a certain number of skins annually, or receive punishment

in proportion as they fall short of the limited quantity. The sable is also killed by the Russian soldiers, who are sent into Siberia for that purpose. Like the criminals, they are taxed a certain number of skins yearly, but, as an encouragement, they are permitted to share among themselves the surplus of the skins which they thus procure.

#### NATURAL HISTORY of the GUINEA WEASEL.

**T**HIS animal is about the size of a rabbit; of a dusky colour, and its form is like that of a rat. Its upper jaw is much longer than the lower, and its eyes are placed about the mid-way between the ears and the tip of the nose. Its ears are like human ears, and it has a remarkable rough tongue. It inhabits Guinea, and is very common about the negro settlements. It burrows like a rabbit, and is so fierce, that if provoked, it will fly at either man or beast.

#### NATURAL HISTORY of the ICHNEUMON.

**T**HE Ichneumon is usually of the size of the martin, and greatly resembles it, except that the hair, which is generally of a grisly black, is rougher and less downy; though the colour is various in different animals from different countries. The tail is less bushy at the end than that of the martin, and every hair has three or four colours, which are seen in different dispositions of its body.

This animal, which is also called the Rat of Pharaoh, has all the strength, agility, and instinct of a cat; it has a more universal appetite for carnage, and a greater variety of methods to procure it. Every living creature which it is able to overcome, it ventures to attack, and preys upon every kind of flesh. Neither the strength of the dog, nor the malice of the cat, can terrify it; neither the claws of the vulture, nor the poison of the viper, can intimidate it; fearless of their venom, it makes war upon all kinds of serpents, and when it perceives the effects of their rage, it obtains an antidote from a certain root, which the Indians call by its name, after which it returns to the attack, and seldom fails of victory. Rats, mice, birds, serpents, lizards, and insects, are all equally pursued by this animal; but it is particularly serviceable to the Egyptians, as it is a great destroyer of the eggs of crocodiles, which it digs out of the sand, and even kills multitudes of the young of those terrible reptiles, before they have been able to reach the water. It is even said, that when it finds a crocodile sleeping on the shore, it boldly enters the mouth of that animal, attacks the enemy in the inside, and, when it has effectually destroyed it, eats its way out again.

The eyes of this animal are sprightly and full of fire, and its physiognomy sensible. Like the rest of its kind, it has glands that open behind, and furnish an odorous substance. It will take the water like an otter, and continue longer under it. It is found in Egypt, Barbary, India, and its islands. It is at present domesticated, and kept in houses in Egypt and India, where it is more useful than a cat in destroying rats and mice. It grows very tame, and will sit up like a squirrel, feeding itself with its fore-feet, and catching any thing that is thrown to it.

The inhabitants of Heracleopolis paid divine honours to the Ichneumon, as to a gracious being, because this little animal is continually seeking the eggs of crocodiles, to break them. "And, what is extraordinary," says Diodorus, "it never eats them, and thus appears condemned by nature to a labour, the utility of which extends only to man. If it did not take that care, the river would be inaccessible to mankind, by reason of the multitude of crocodiles with which the banks would be surrounded. The Ichneumon kills the crocodiles themselves by a piece of craft altogether singular, and which is scarce credible. Whilst the crocodile sleeps on the shore, with its mouth open, the Ichneumon, after rolling



ling itself in the mud, enters on a sudden into its body; there it devours its entrails, and afterwards comes out, without danger, from the belly of the animal, whom it leaves dead." The Ichneumon was consecrated to Latona and Lucina.

#### NATURAL HISTORY of the SQUASH.

**T**HE upper jaw of this animal is much longer than the lower; its ears are rounded, and its hair pretty long, hard, and upright. It is varied with black and white, and has only four toes on each foot before, though all other weasels have five.

#### NATURAL HISTORY of the STIFLING WEASEL.

**T**HIS animal has a short slender nose, short ears and legs, and its body is black and full of hair. Its tail, which is long, is black and white. Its length, from the nose to the insertion of the tail, is about eighteen inches. It is a native of Mexico, and probably some other parts of America.

This animal, the conepate of Buffon, the skunk, the zorilla, and fizzler, are all remarkable for the pestiferous, stinking, and suffocating vapour they emit from behind, when attacked, pursued, or terrified. It is indeed their only means of defence. Some turn their tail to their enemy, and emit a horrid effluvia, and others ejaculate their urine to a very considerable distance: the terrible stench immediately stops the pursuers, and, if any of this liquid should happen to fall into the eyes, it almost occasions blindness; if on the cloaths the smell will continue for several days, and cannot be removed by washing: they must even be buried in fresh earth in order to be sweetened. Dogs that have been used to hunt this animal will kill it, but others run back as soon as they perceive the smell. Even those dogs which have been accustomed to them are obliged to relieve themselves, by frequently thrusting their noses into the ground. Professor Kalm says, he was in danger of being suffocated by one that was pursued into a house where he slept; and the cattle were so much affected, that they bellowed through pain. Another, which was killed by a woman in a cellar, so affected her with its stench, that she kept her bed for several days after, and all the meat, and other provisions that were kept there, were so infected, that the owner was obliged to throw them away. Notwithstanding this, the Americans eat its flesh, which they reckon good food; but they are careful to deprive it of those glands which are so abominably offensive.

The Virginian species is capable of being tamed, and will follow its master like a dog, and never emits its vapour except it is injured or frightened.

In other respects, the squash, the conepate, the skunk, the zorilla, and the fizzler, do not materially differ. The squash is about the size of a pole-cat, and its hair is of a deep brown; but, as already observed, it has only four toes on each foot. The skunk also resembles a pole-cat in shape and size, but its colour is partly black and partly white, variously disposed over the body: and the hair is very long, glossy, and beautiful. Mr. Buffon supposes the conepate and the zorilla to be the same; and indeed it appears needless to make a distinction, as they perfectly resemble each other, except in size; the conepate being somewhat smaller. The zorilla resembles the skunk, but is smaller, and more beautifully coloured, its streaks of black and white being more distinct and regular.

#### NATURAL HISTORY of the CIVET.

**L**IKE the rest of the weasel kind, the Civet has a long slender body, short legs, and an odorous matter exuding from the glands behind. It also resembles the rest of the tribe in the softness of its fur, the number of its claws, and their incapacity of being sheathed; but it differs from them in being much larger than any of those which have already been described;

No. 9.

its length from nose to tail being about two feet three inches, the tail fourteen inches, and the body pretty thick. It has a long nose like that of a fox. The colour of the Civet varies, but it is usually ash spotted with black; though in the female it is whiter and tending to yellow, and the spots are much larger, like those of the panther; the Civet has whiskers, like the rest of its kind, and its eyes are black and beautiful.

This animal inhabits India, the Philippine islands, Guinea, Æthiopia, and Madagascar. The famous drug musk, or Civet, is produced from an overture between the privities and the anus, in both sexes, secreted from certain glands. Those who keep them, provide for them a box for an habitation, and procure the musk by scraping the inside of the box about twice or three times a week with an iron spatula, and get about a dram each time. But it is difficult to get it pure, being generally mixed with suet or oil, to add to the weight. The male yields the most, especially if it be previously irritated. When young, they are fed with pap made of millet, and a little flesh or fish, and, when old, they are fed principally with raw flesh. In a wild state they prey on fowl.

Though the Civet is a native of the warmest climates, it will live in temperate, and even cold climates, if carefully defended from the injuries of the weather. Great numbers of these animals are bred in Holland, where no inconsiderable advantage is made of its perfume. The musk of Amsterdam is reckoned the best of any, it being less adulterated than that of any other country.

The perfume of the Civet is so strong that it communicates itself to every part of the animal's body; even the fur and the skin preserve their odour long after they are taken from the body; the perfume of this animal is so copiously diffused, as to be insupportable when shut up in a close room with it. Like all the weasel kind, the scent of this animal, when irritated, is much more violent than ordinary.

The Civet is a fierce animal, and though capable of being tamed, in some degree, is never thoroughly familiar. In their native climates they breed very fast; but, in our temperate latitudes, though they furnish great quantities of their perfume, they are not known to multiply.

This species is distinguished by Mr. Buffon into two kinds, one of which he calls the Civet, and the other the Zibet, but their similarity is so great in every particular, we shall (like all other naturalists except Mr. Buffon) consider these two merely as varieties of the same animal, a little altered by climate, food, or education.

It does not appear that the Civet was known to the ancients, and it is probable they purchased the drug without knowing its origin; for it is certain that perfumes were used by the fine gentlemen at Rome.

#### NATURAL HISTORY of the GENET.

**T**HE Genet is usually somewhat smaller than the martin, and resembles all those of the weasel kind, in its length, compared to its height: it also resembles them in having a soft beautiful fur, in having its feet armed with claws that cannot be sheathed, and in its appetite for carnage; but it differs from them in having the nose much smaller and longer, resembling that of a fox: the tail, instead of being bushy, tapers to a point, and is much longer. Its paws are smaller, and its ears larger. The Genet is a beautiful animal, spotted with black, upon a ground mixed with red and grey. It has two sorts of hair, the one shorter and softer, and the other longer and stronger. Upon the sides, its spots are distinct and separate, but unite towards the back, and form black stripes. It has a kind of mane the whole length of the back, forming a black streak from the head to the tail; and the tail has alternate rings of black and white, from the insertion to the end.

This animal is an inhabitant of Turkey, Syria, and Spain, and frequents the banks of rivers. It smells faintly of musk; and, like the Civet, has an orifice beneath

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neath the tail. It is easily tamed, and, in the houses of Constantinople, is permitted to run about like a cat, and is as useful as that animal in catching mice.

#### NATURAL HISTORY of the FOSSANE.

IT has a slender body, covered with ash-coloured hair, mixed with tawny: four black lines extend from the hind-part of the head towards the back and shoulders: the shoulders, sides, and thighs are black, and it has regular rings of black the whole length of its tail. It inhabits Madagascar, Guinea, and the Philippine isles. It is fierce, and almost untameable: it destroys poultry, and, when young, is reckoned excellent food.

#### NATURAL HISTORY of the OTTER.

THE Otter is an amphibious animal, resembling those of the terrestrial kind in shape, hair, and internal conformation; and resembling the aquatic tribes in the manner of living, and in having membranes or webs between the toes to assist it in swimming. From this peculiar make of its feet, it swims faster than it runs, and can overtake fishes in their own element. It has a black nose, and long whiskers; the eyes are very small, and placed nearer the nose than in other animals; the upper-jaw is longer and broader than the lower; the ears are small, erect, and conic: the hair is long and thick. The colour sometimes varies to silvery: the legs are very short, but remarkably strong, broad, and muscular; the toes are covered with hair, and joined by a web. The joints are so loosely articulated, that the Otter is capable of turning them quite back, and bringing them on a line with the body, so as to perform the offices of fins. The length of this animal, from nose to tail, is usually about twenty-three inches; and its tail, which is flat and sharp-pointed, and fullest of hair in the middle, is about thirteen inches.

This animal is found only at the sides of lakes and rivers, and greatly prefers the former, not being fond of fishing in a running stream; for if it hunts against the stream, it swims too slow, and if with the current it over-shoots its prey; but, in rivers, it always swims against the stream, choosing rather to meet the fishes it preys upon than to pursue them. The Otter makes terrible havock in a lake or pond, where it destroys much more than it can devour, and, in the space of a few nights, will sometimes entirely spoil a pond. They are very injurious to fishermen, as they never fail to tear their nets in pieces whenever they happen to be entangled.

Though the Otter is furnished with a supply much greater than its consumption in summer, and frequently kills for its amusement, leaving quantities of dead fish on the margin of the lake, rather as trophies of its victory than of its wants; yet, in winter, when the lakes are frozen over, and the rivers roll in a rapid torrent, this animal is greatly distressed, and is obliged to content itself with grass, weeds, and the bark of trees. Grown courageous from hunger, it comes upon land, and feeds upon rats and insects, and, some say, even upon sheep.

In forming its habitation, the Otter shews great sagacity; it burrows under ground on the banks of some river or lake, and the extreme of its hole is always under water. It works upwards to the surface of the earth, and there makes a small orifice for the admission of air. The Otter brings forth four or five young at a time, and, as it frequents ponds near gentlemen's houses, litters of them have sometimes been found in cellars, sinks, and other drains.

The colour of this animal is a deep brown, except two small spots of white on each side of the nose, and another under the chin. The skin, if the animal is killed in winter, is very valuable, and is much used by the inhabitants of cold countries for lining to their cloaths; but in England, it is seldom used for any thing but covers for pistol furniture. The best furs of this

kind are found in the northern part of Europe and America. The flesh of this animal is extremely rank and fishy. To take the old ones alive is no easy task, as they are extremely strong, and few dogs will venture to encounter them: they bite with great vehemence, and when they have once fastened will never quit their hold.

This animal inhabits all parts of Europe, north and north-east of Asia, and abounds in North-America, particularly in Canada. It is capable of being tamed, when it will follow its master like a dog, and even fish for him.

#### The Lesser OTTER.

This animal is about three times as small as the common Otter, though resembling it in form: it has roundish ears, a white chin, and a hoary head; though the hair of some are tawny. Its body is tawny and dusky; the short hair being yellowish, and the long hair black: the feet are broad, webbed, and covered with hair. The tail is dusky, and ends in a point. It is a native of Poland, and the north of Europe; and lives on fishes, frogs, and water-insects: its fur is in great esteem, and next in beauty to that of the sable. The skins are often brought over to England. It is a stinking animal, and is caught with dogs and traps. This animal is the same as the minx of America. Lawson says it is a great enemy to the tortoises, scraping their eggs out of the sands and devouring them. It eats fresh-water muscles, the shells of which are found in great abundance at the mouth of their holes, high up in the rivers, on the margin of which they live. It may be domesticated, and is a great destroyer of rats and mice.

#### The Sea OTTER.

The upper-jaw of this animal is longer and broader than the lower: it has a black nose, and long white whiskers: its ears are small, erect, and conic; and in each jaw are four cutting-teeth: the grinders are broad, and adapted for breaking crustaceous animals and shell-fish. The hair is thick, long, black, and glossy; beneath which there is a soft down. Its legs are thick and short; the toes are covered with hair and joined by a web. The hind-feet are like those of a seal, and have a membrane skirting the out-side of the exterior toe, like that of a goose. It is about four feet two inches long from the nose to the insertion of the tail; and the tail, which is flat and sharp pointed, is about two inches. One of these animals is sometimes found to weigh seventy or eighty pounds.

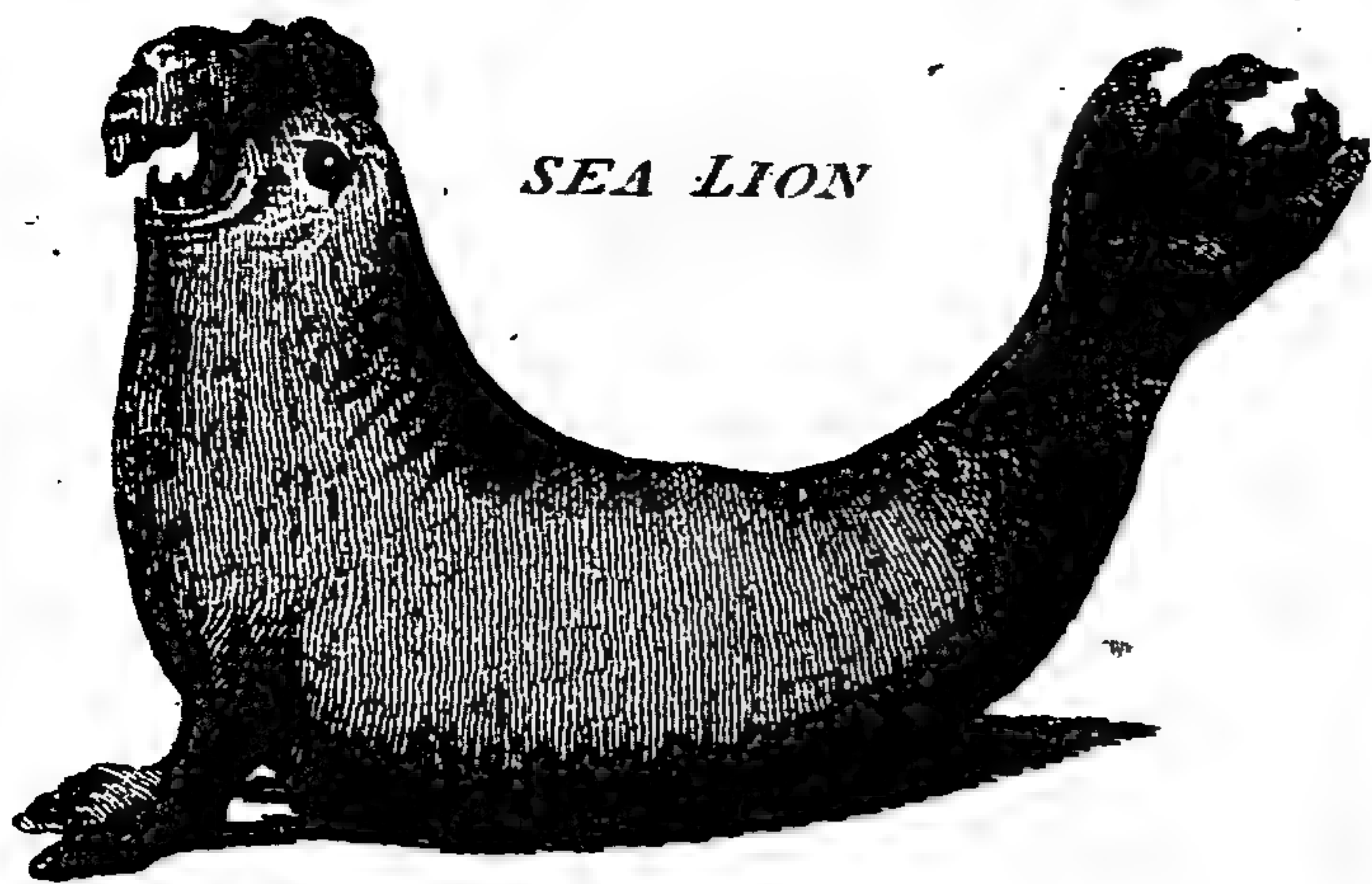
Sea Otters are very numerous on the coasts of Kamtschatka, and those parts of America opposite to it, which were discovered by the Russians. They are also in the Brazilian rivers, and that of Oronoque. They are inoffensive animals, and so remarkably affectionate to their young, that, at the loss of them, they will pine to death, on the very spot where they have been taken from them. Before the young can swim, the old animals carry them in their paws, lying in the water on their backs. They are very sportive, and chiefly inhabit the shallows, where plenty of sea-weeds are to be found. They feed upon lobsters and other fish. They breed once a year, and bring forth but one at a time, which is deposited on shore. These animals are hunted for the skins, which are very valuable; and the flesh of their young is reckoned very delicate food, equal if not superior to that of lamb.

#### NATURAL HISTORY of the CAVY.

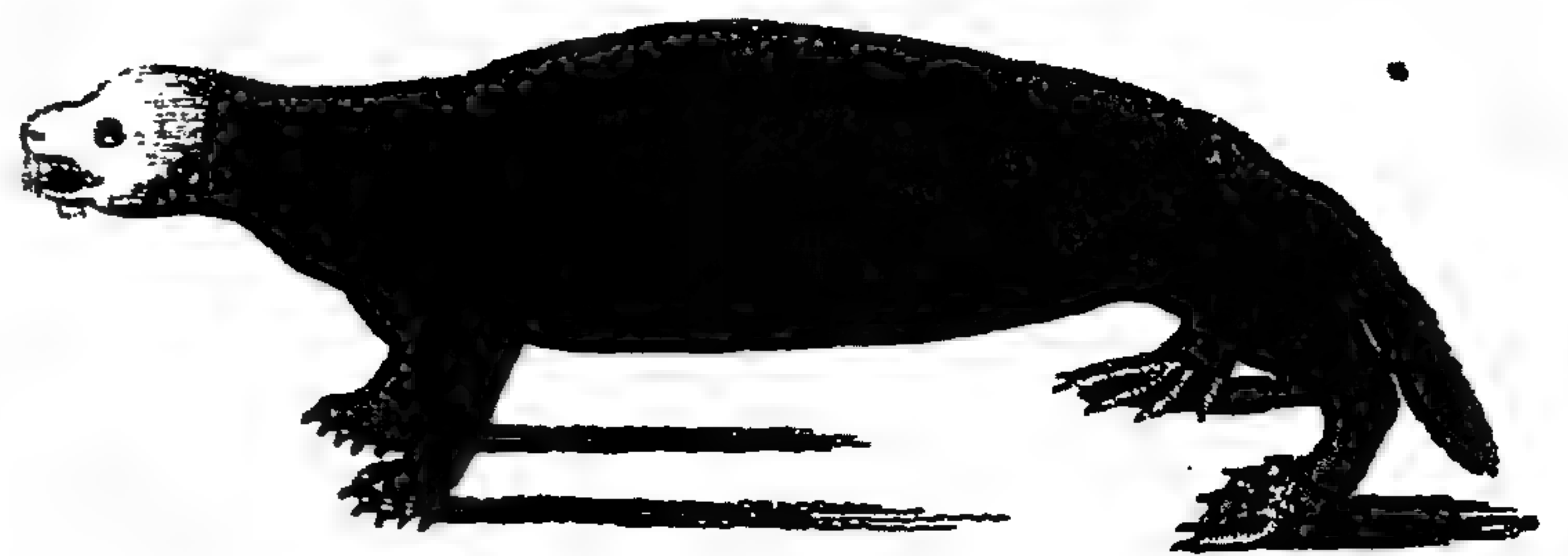
IN England this animal is called a Guinea-Pig, and by Buffon the Indian-Pig. Its ears are large, broad, and rounded at the sides; its upper-lip is half divided, and its hair is erect, somewhat resembling that of a young pig. The colour is white, or white varied with orange, and black in irregular blotches. It has four toes on the fore-feet, and three on the hind-feet, but is without a tail. It is a native of Brasil, but writers have given no account of it in its wild state. It is become



# QUADRUPEDS.



SEA LION



SEA OTTER



SIGAH GUSH



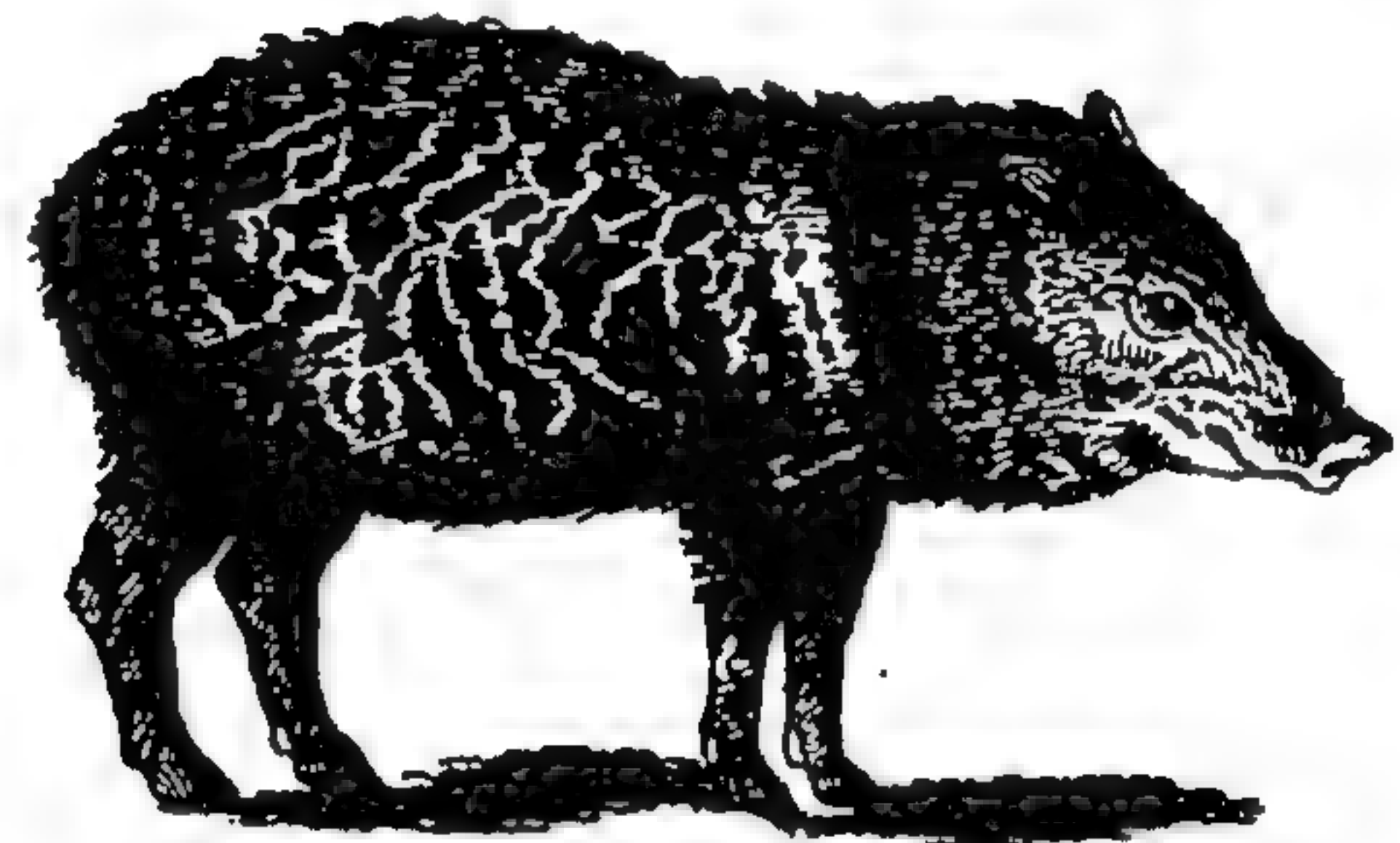
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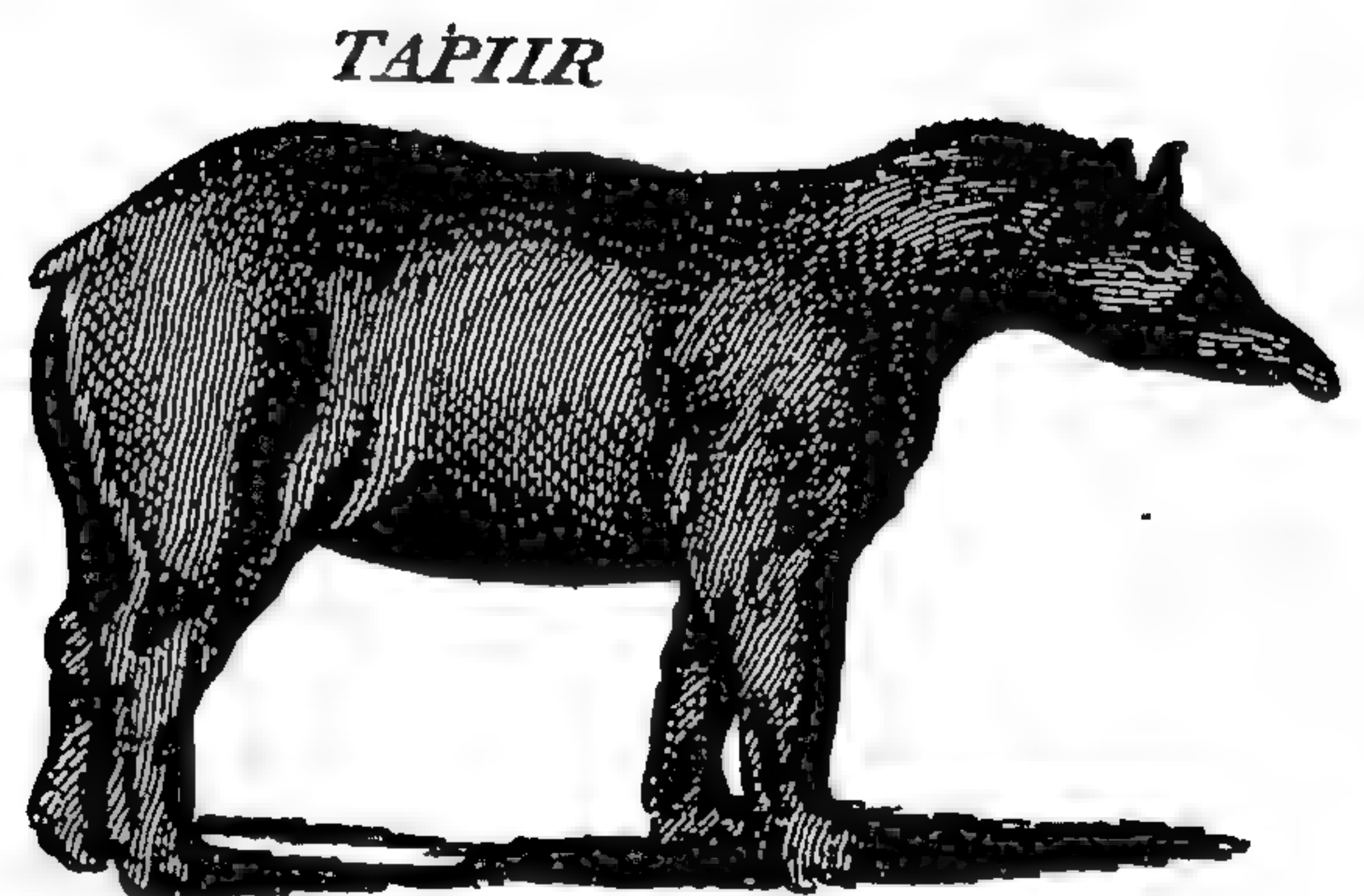
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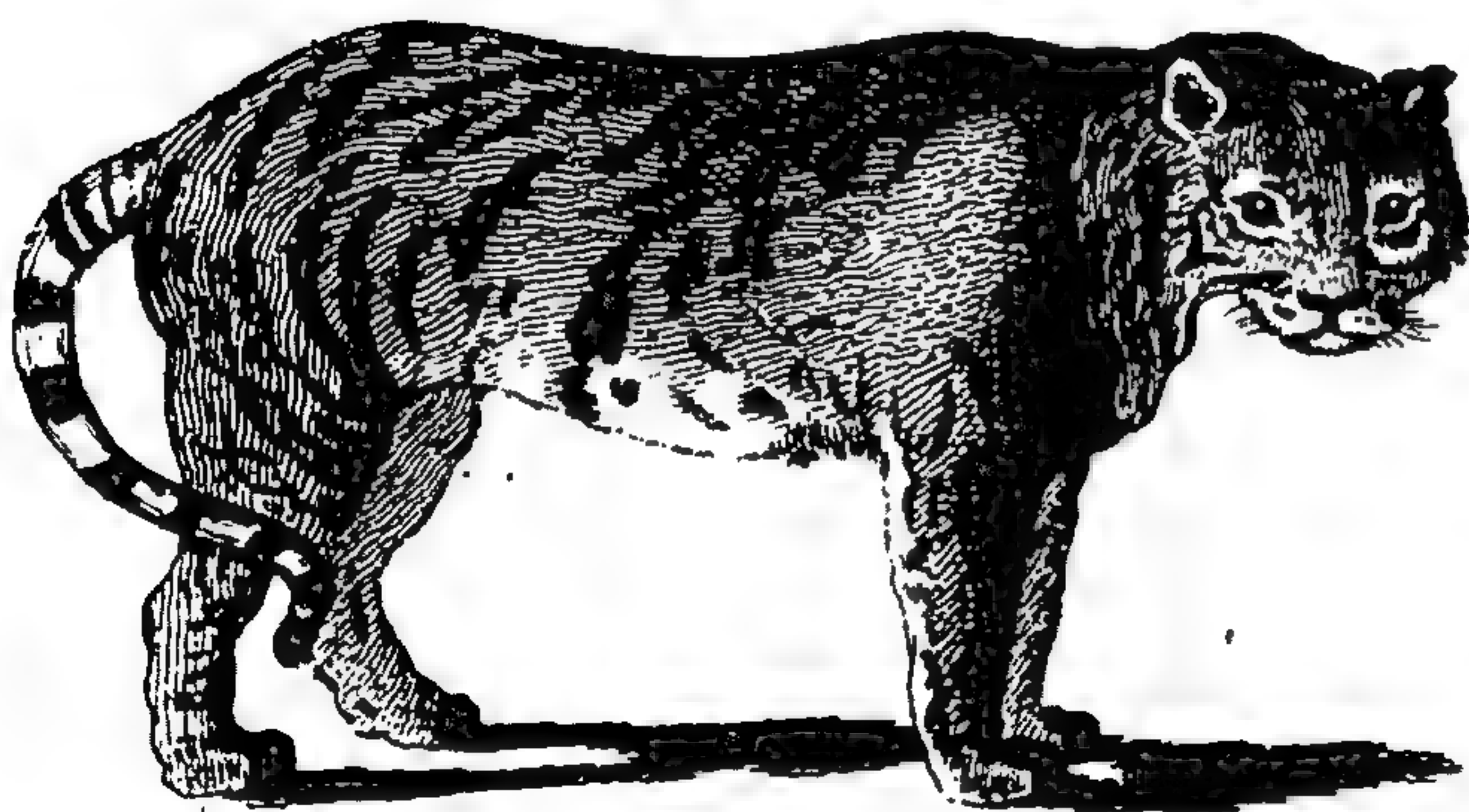
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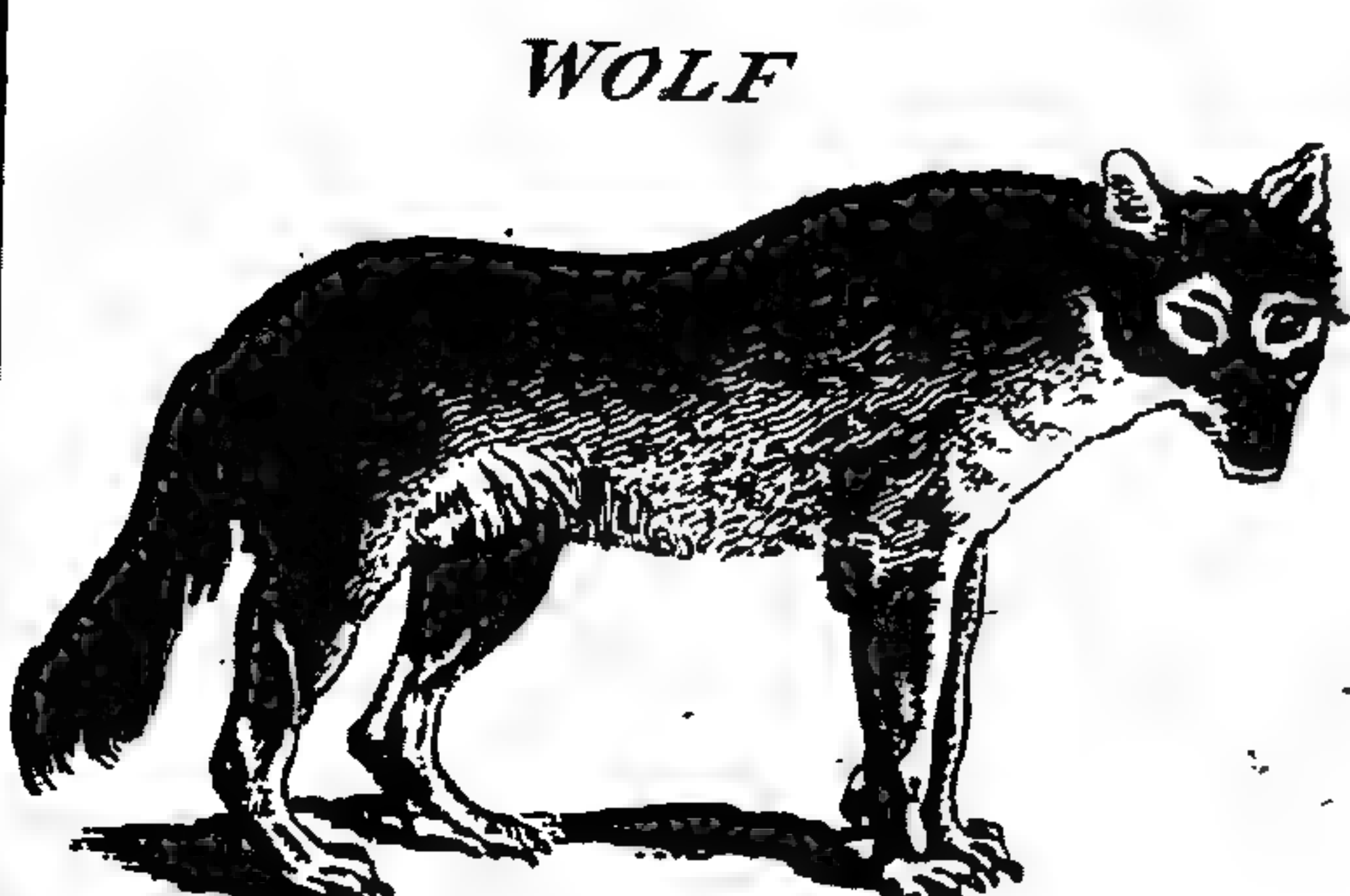
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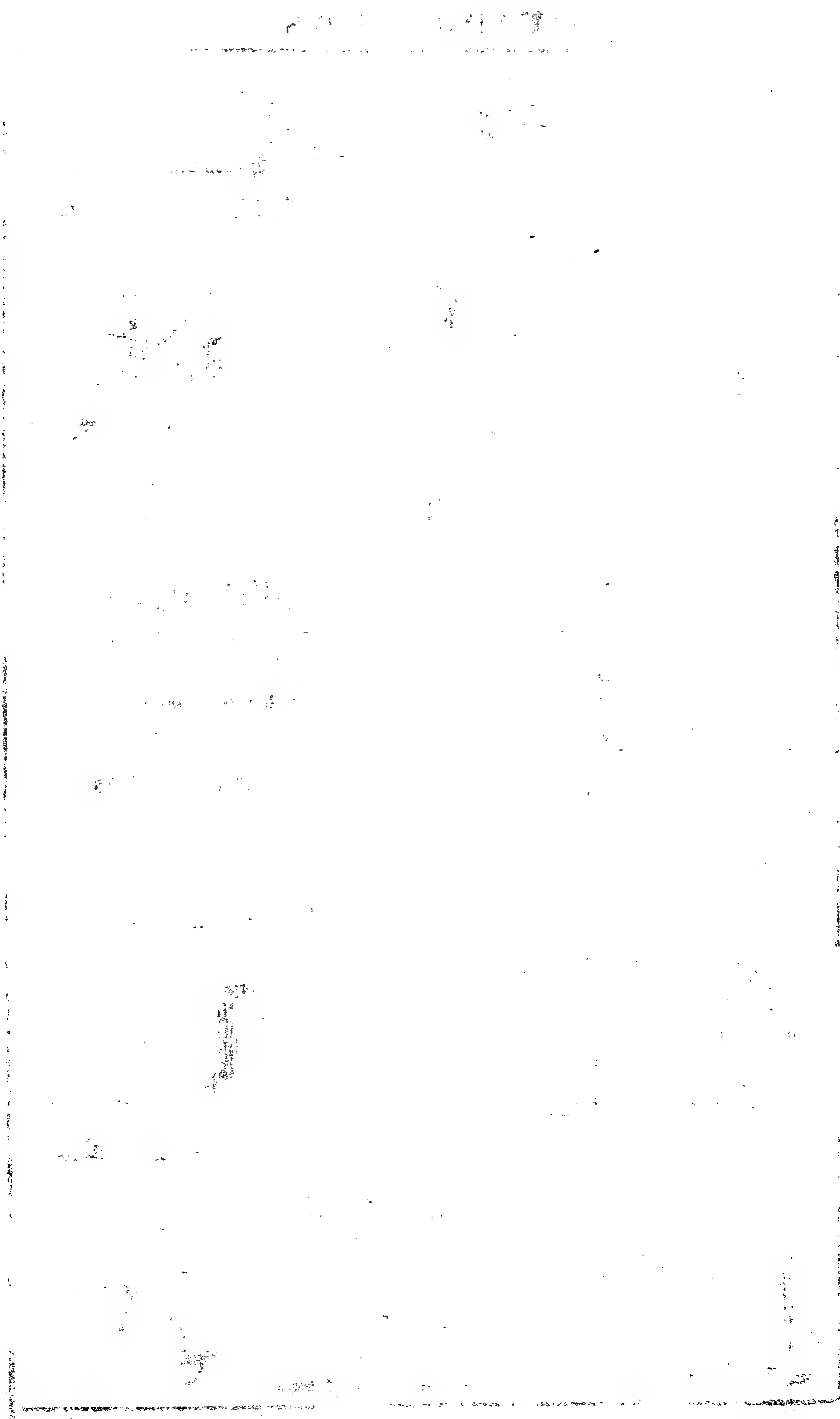


ZEBRA



ZERDA







come domestic in Europe, and is a restless, grunting little animal, continually running from corner to corner; and feeds on bread, vegetables, and grains. It breeds at the age of two months, and brings from four to twelve at a time. It is a prolific creature, and breeds every two months. These animals would be innumerable, if some were not destroyed by cats and others killed by the males; and if they were not also very tender animals, and perishing frequently with cold. Rats, it is said, avoid the haunts of this creature.

#### The ROCK CAVY.

This animal is about a foot in length, has a divided upper-lip, short ears, four toes on the fore feet, and three on the hind, and like the former, is without a tail. The upper part of the body is of the colour of the common hare, and its belly is white. It is a native of Brasil, and lives in the holes of rocks. It is hunted by little dogs, and the flesh of it is superior in flavour to that of our rabbits. Its paces are like that of a hare.

#### The Spotted CAVY, or HOG-RABBIT.

The spotted Cavy has five toes upon each foot, and only the mere rudiment of a tail. The upper-jaw is longer than the lower, and the ears short and naked. It has long whiskers, and the upper-part of the body is of a dark brown colour; the sides are marked lengthways with lines of grey spots, and the belly is white. It is about ten inches long, and its form is like that of a pig. It inhabits Brasil and Guinea, chiefly in fenny places, and burrows under-ground. It grunts like a pig, and will bite severely. It grows very fat, and is reckoned a great delicacy in Brasil. On the banks of the river St. Francis, a variety of this species is found which is entirely white.

#### The Long-Nosed CAVY.

This animal is about the size of a rabbit, has a long

nose, a divided upper-lip, short rounded ears and black eyes. The hair is hard and shining, is a mixture of red, brown, and black; of a bright orange colour on the rump, and yellow on the belly. It has black slender legs, four toes on the fore feet, and three on the hind, and a short naked tail. This is also a native of Brasil, and Guiana, and is a voracious little animal. It grunts like a pig, and, sitting on its hind legs, holds its food with the fore-feet when it eats; and what it cannot devour it conceals. It goes very fast, and its motions are like those of a hare. When pursued, it usually takes shelter in an hollow tree. When irritated, its hair bristles on its back, and it strikes the ground with its feet. Its flesh is eaten by the inhabitants of South-America. This animal is capable of being tamed.

There is a species less than the above, and of an orange colour, and another which inhabits Java and Sumatra, about the size of a hare, and of a reddish colour.

#### The CAPE CAVY.

The length of this animal is about ten inches. It has a thick head, full cheeks, and oval ears, which are almost hid in the fur. The head is of the colour of a hare, and the top of the back dusky, mixed with grey; the sides and belly are of a whitish grey; and the shape of the body is thick and clumsy. It has four toes on the fore-feet, and three behind. The tail is hardly visible. It inhabits the mountains near the Cape of Hood-Hope, and burrows underground like a rabbit. It is esteemed very good meat by the inhabitants of that part of the world.

#### The MUSK CAVY.

This animal is almost as large as a rabbit; the upper-part of its body is of a black colour, and its belly white. It burrows like a rabbit, and inhabits Martinico, and the rest of the Antilles. It smells so strong of musk, that it may be pursued by its perfume.

## C H A P. XI.

*Containing the NATURAL HISTORY of the HARE; the RABBIT; the BEAVER; the PORCUPINE; the MARMOT; the SQUIRREL, &c.*

#### NATURAL HISTORY of the HARE.

THE Hare is one of the most persecuted and most timorous of animals: being a weak and defenceless creature, it is endued, in a remarkable degree, with that preserving passion, fear: this makes it perpetually attentive to every alarm, and keeps it continually lean. To enable it to receive the most distant notices of danger, nature has provided it with very long ears, which, like the tubes applied to the ears of deaf people, convey to it those sounds which are remote, and the animal's motions are directed accordingly. It has large prominent eyes, placed backwards in its head, and so adapted as to receive the rays of light on every side; so that, while it runs, it can almost see behind. The eyes of this animal are never wholly closed; it is so continually on the watch, that it even sleeps with them open. The muscles of the body are strong and without fat; it has therefore no superfluous burthen of flesh to carry. To assist it to escape its pursuers, the hind-legs are formed remarkably long, which still adds to the rapidity of its motion; and so sensible is the animal of this peculiar advantage, that, when it is started, it always makes towards the rising ground.

The various stratagems and doubles it uses, when hunted, are so universally known that it would be super-

fluous to enumerate them. It might reasonably be supposed that an animal so well formed for a life of escape, might enjoy a state of tolerable security, but its enemies are so numerous, that it seldom lives out its natural term. Dogs of all kinds pursue it by instinct. The cat and the weasel kinds exercise all their little arts to seize it. Birds of prey, ants, snakes, and adders drive them from their forms, particularly in summer; but man, its most powerful enemy, destroys greater numbers than all the rest. They are hunted by the sportsman, shot at by the poacher, and caught in springs by the farmer. Persecuted thus on every side, did it not find a resource in its amazing fertility, the whole race would long since have been extirpated.

This animal seldom leaves its form in the day, but takes a circuit in search of food in the night. The colour of a Hare approaching very near to that of the ground, it is on that account more effectually secured from the sight of men, and of beasts and birds of prey. In northern countries, Providence has been so careful to preserve these and many other animals, as to cause them to change colour and become white at the beginning of winter, to render them less conspicuous amidst the snow. Their natural instincts for their preservation are indeed very extraordinary: they make themselves a form, or bed, in those places where the colour



of the grafs most refembles their skin: it is open to the fouth in winter, and to the north in fummer.

The hare multiplies exceedingly, and breeds when it is only a few months old; the female goes thirty days with young, and ufually brings but two at a time, though fometimes three or four. Sir Thomas Brown and Mr. Buffon affert the doctrine of fuperfetation, or conception upon conception; but, as the hare breeds frequently in the courfe of a year, their numbers may be accounted for without yielding implicit credit to this affertion. The young of the hare is brought forth with their eyes open, and they are fuckled by the dam for twenty days; after which they leave her, and begin to fhift for themfelves; fo that the family connection of thefe animals is but of fhort duration.

The food of the hare is entirely vegetable; they live upon grafs, roots, leaves, fruits, and corn, and prefer thofe plants which fupply a milky juice: they do great injury to nurseries of young trees, by eating the bark off; fcarce any tree comes amifs to them, except the lime or the alder; they are remarkably fond of pinks, parfley, and birch.

Thefe animals feldom live above feven or eight years; in our climate, they pafs their lives in folitude and filence; and they feldom are heard to cry, except when they are feized or wounded. Though apparently wild, they are of a complying nature, and eafily tamed: they even become fond and careffing, but are incapable of forming any particular attachment; and, though taken ever fo young, they embrace the firft opportunity to regain their ancient freedom. The hares of the hot countries, particularly in Barbary, Spain, and Italy, are fmall than ours: the beft in Europe are faid to be bred in the Milaneze. They inhabit every part of Europe, moft parts of Asia, Japan, Ceylon, Egypt, Barbary, and North America.

The fur of the Hare is of great ufe in the hat manufacture, and as this country cannot fupply a fufficient number, many thoufands of the fkins are annually imported from Ruffia and Siberia. In the laft mentioned country they affemble in great troops of four or five hundred. The Hare was thought a great delicacy among the Romans, though it was forbidden among the Britons. The flefh of it is now much efteemed by the inhabitants of Great-Britain.

The animal called a Hare by our voyagers to Patagonia, is at prefent of a doubtful genus.

#### NATURAL HISTORY of the RABBIT.

**T**HOUGH the hare and the Rabbit nearly refemble each other in form and difpofition, they are diftinct kinds, and refufe to mix with each other. Mr. Buffon kept feveral of both kinds in the fame place; but, from being at firft indifferent, they prefently became enemies, and often fought till one of the contending parties was either difabled or destroyed. It is however afferted by fome naturalifts, that an animal is often produced between thefe two, which, like the mule, is marked with fterility.

Pliny judiciously remarks, that "Nature has fhewn great kindnefs, in caufing thofe things to be moft prolific, that are the moft harmlefs, and the propereft for our food." This obfervation is finely illuftrated in the great fruitfulness of this animal. Rabbits will breed feven times a year, and perhaps bring eight young ones every time: on a fuppoftion that this happens regularly for four years, a pair will in that time multiply to one million, two hundred feventy-four thoufand, eight hundred and forty. From this calculation, we might juftly be afraid of being over-ftocked with thefe animals, if their numbers were not diminished by every beaft and bird of prey, and particularly by man himfelf. But, notwithstanding they have fo many enemies, Pliny and Strabo inform us, that they were once fo great a nuisance to the inhabitants of the Balearic iflands, that, in the time of Auguftus, they implored the affiftance of a military force from the Romans, in order to extirpate them

Spain is their native country, where they are taken by ferrets as they are with us. They like a temperate climate, and cannot endure much cold; fo that in Sweden they are obliged to be kept in houfes.

The hare has various arts and inftincts to efcape its purfuers, by doubling, fquatting, and winding; the Rabbit has only one art of defence, but finds more fecurity in that one, than the hare by all the arts it praftifes. It makes itfelf a hole in the earth, where it continues a great part of the day, and nurfes its young: there it remains fecure from the fox, the hound, the kite, and almoft every other enemy.

The female brings forth her young feparate from the male. On this occafion fhe digs herfelf an hole, different from the ordinary one, and more intricate, and makes a more fpacious apartment at the bottom of it. She then plucks from her body a large quantity of hair, with which fhe prepares a kind of bed for her young. She never leaves them the two firft days, except to procure nourifhment, and returns with the utmoft difpatch: fhe continues to fuckle her young almoft fix weeks, when they become ftrong, and are able to go abroad. During all this time, their feparate apartment is feldom vifited by the male, but as foon as the little family are able to come to the mouth of the hole, he feems to acknowledge them as his offspring, takes them between his paws, fmooths their fkin, and licks their eyes; each, in its turn, having an equal fhare in his careffes.

Rabbits that are bred up tame, confcious of being already protected, do not take the trouble of digging a hole: thefe, like all other animals under the protection of man, are of various colours; white, brown, black, and mouse-colour. Moft of the wild Rabbits are of a brown. This animal, though lefs than the hare, generally lives longer. It is alfo fatter, in general, than the hare, but its flefh is lefs delicate. Tame Rabbits are larger than wild ones, from their taking more nourifhment, and ujing lefs exercife, but their flefh fofter and more infipid. The counties of England, which are reckoned moft famous for thefe animals, are Lincolnfhire, Norfolk, and Cambridgefhire. The fkins of the Rabbit, efpecially thofe which are white, are ufed for lining cloaths, and are confidered as a cheap imitation of ermine; but the principal ufe made of Rabbits fur, is in the manufacture of hats; fome parts of it, however, which are unfit for that purpofe, have been found as good as feathers for ftuffing beds and bolfters.

The Angora Rabbit has long hair, waved, and of a filky finenefs, like that of the goat of Angora. The Ruffian Rabbit has a double fkin over the back, into which it can withdraw its head; and another under the throat, in which it can place its fore-feet: in the loofe fkin on the back, it has fmall holes, to admit light to the eyes; the colour of the body is a palifh yellow, and the head and ears are brown.

Rabbits are fubject to two principal infirmities. Firft, the rot, which is caufed by giving them too large a quantity of greens, or from the giving them frefh gathered, with the dew or rain hanging in drops upon them. It is over-moifture which always caufes this difeafe; the greens therefore are always to be given dry, and a fufficient quantity of hay, or other dry food, intermixed with them, to take up the abundant moifture of their juices. On this account, the very beft food that can be given them, is the fhorteft and fweeteft hay that can be got, of which one load will ferve two hundred couple a year; and out of this flock of two hundred, two hundred more may be eat in the family, two hundred fold to the markets, and a fufficient number kept in cafe of accidents.

The other general difeafe of thefe creatures is a fort of madnefs: this may be known by their wallowing and tumbling about with their heels upwards, and hopping in an odd manner into their boxes. This diftemper is fuppofted to be owing to the ranknefs of their feeding; and the general cure is the keeping them low, and giving them the prickly herb, called tare thiftle, to eat.



## The Brazilian RABBIT.

This animal has very long ears, black eyes, and a white ring round the neck: the face is of a reddish colour, the chin white, and the body somewhat darker than the common hare; it has a whitish belly, and is without a tail. Some of these animals have not the white ring round the neck. They inhabit Brasil, and Mexico, and live in woods, but do not burrow: they are very prolific, and their flesh is very good meat.

## The Baikal RABBIT.

The fur of this animal is of the colour of the common hare, but it is red about the neck and feet. It has a long tail, which is black above and white beneath. It is larger than a common rabbit; and inhabits the country beyond lake Baikal. It agrees with the common rabbit in nature, and the colour of the flesh; but the fur is coarse and of no value.

Linnæus mentions the Cape Rabbit, which has red feet, and a tail about the length of the head; he says it inhabits the Cape of Good-Hope, and burrows: this, however, is the whole account which Linnæus has given of the species.

## NATURAL HISTORY of the BEAVER.

THE Beaver is the only animal, among quadrupeds, that has a flat broad tail, covered with scales, serving as a rudder to direct its motions in the water. It has membranes, or webs, between the toes on the hind-feet, but none on the fore-feet, which, as in the squirrel, supply the place of hands. In short, this animal, in its fore-parts, entirely resembles a quadruped, and in its hinder-parts approaches the nature of fishes, by having a scaly tail. It has strong cutting-teeth, short ears, almost hid in the fur, and a blunt nose; the hair is of a deep chesnut brown. Its length from nose to tail is about three feet; and the tail is about eleven inches long, and three broad. It is singular in its conformation, as having, like birds, but one and the same vent for its natural discharges.

About the month of June and July, the Beavers begin to assemble and form a society, which is to continue for the greatest part of the year. They gather together from all quarters, and usually form a company of at least two hundred. Where they meet they generally fix their abode, and this is always by the side of a lake or river. If it be a lake, and consequently has no stream, they dispense with building a dam; but if it be a river, which is subject to floods and falls, they build a dam or pier that crosses the stream, so that it forms a dead water in that part which lies above and below. In order to form this pier, they drive stakes into the ground which are about five or six feet long, placed in rows, wattling each row with pliant twigs, and filling the interstices with clay, which they ram down very close. The side next the water is sloped, and the other perpendicular. The bottom is from ten to twelve feet thick; but the thickness gradually diminishes to the top, which is about two or three. This dam or pier is generally fourscore or an hundred feet in length. If we compare the greatness of the work with the powers of the architect, it will appear enormous; but the solidity with which it is built is still more astonishing than its size.

They erect their houses near the shore, in the water collected by means of the dam. They are built on piles, and are either round or oval. The tops are vaulted, and consequently their inside resembles an oven, and the outside a dome. The walls, which are two feet thick, are made of earth, stones, and sticks, placed together with uncommon art; and the walls within are as neatly plaistered as if they were wrought by the trowel of an experienced mason. There are two openings in each house; one into the water, and the other towards the land. The height of these houses above the water is usually about eight feet. For the convenience of change, in case of floods, they frequently make two or three stories in each dwelling: from two to thirty Beavers inha-

bit each house; and, in each pond, there are from ten to twenty-five houses. Each Beaver prepares its bed of moss, and every family collects a magazine of winter provisions, consisting of bark and boughs of trees, which they deposit under water, and bring into their apartments as occasion may require. In winter they are fondest of the saffra, the ash, the birch, the plane, and sweet gum: but, during the summer, they are perfect epicures, and daily regale themselves on the choicest plants and fruits which the country affords. Though they are not fond of fish in general, they sometimes feed on crabs and crawfish.

In the construction of their buildings, each performs his part. Some gnaw, with their teeth, large pieces of wood as thick as a man's arm, into beams or pillars; others roll the pieces along the water; some dive under water, and scrape holes in the earth with their feet to receive these pillars; while others are busied in rearing them in their proper places: another party is engaged in collecting twigs to wattle the piles with. Some collect stones, earth, and clay; others temper the mortar; and others on their broad tails carry the materials to the proper places, and, with the same instrument, ram them between the piles, or plaister the inside of their houses. They appoint an overseer in the society, who gives a certain number of strokes with his tail, as a signal for repairing to particular places; either for mending defects, or at the approach of an enemy; and the whole company attend to it with the utmost assiduity. They breed once a year, and bring forth at the latter end of the winter; they have two or three young at a birth.

From the result of the Beaver's labours, we see how far instinct may be aided by imitation; and to what degree animals, which have neither language nor reason, can concur for their mutual advantage. If we examine this creature merely as an individual, we shall find it inferior in cunning to many other quadrupeds, and to almost all in the powers of annoyance and defence. When taken from its fellows, and kept in solitude, or in a state of domestic tameness, it is a mild, gentle, and familiar animal, but appears somewhat dull and melancholy. It has no violent passions nor vehement appetites, but is perfectly calm and indifferent, without attachments or antipathies, neither endeavouring to please, or desiring to offend. It is equally unqualified to serve or to command, and is only adapted to live among its kind. Its talents are displayed only in society: when alone, it has but little industry, and wants the sagacity to guard against the most obvious snares laid for it by the hunter: it never attacks any other animal, and when it is attacked itself, it prefers flight to the combat, and resists only when driven to an extremity; fighting only when its speed can no longer avail.

Besides these associated Beavers, there is another sort, called terriers, which either have not the industry or sagacity to erect houses like the others: they burrow in the banks of rivers, and, like the others, treasure up their winter stock of provision.

Beavers vary in their colour: the finest are black, but the general colour is a chesnut brown, more or less dark; they have been seen white, but not often. Their skins are a considerable article in trade, being the foundation of the hat manufacture. In 1763, the Hudson's-Bay company sold fifty-four thousand, six hundred and seventy Beavers skins in one sale.

Merchants distinguish three sorts of Beavers; though they are all the skins of the same animal; the new Beaver, the dry Beaver, and the coat Beaver. The new Beaver, which is also called the Muscovy Beaver, because it is usually kept to be sent to Muscovy, is that which the savages catch in their winter hunting. It is the best and the most proper for making fine furs, because it has lost none of its hair by shedding. The dry Beaver, which is also called lean Beaver, comes from the summer hunting, which is the time that these animals lose part of their hair. Though this sort of Beaver is much inferior to the other, it may also be employed in furs; but it is chiefly used in the manufacture of hats. The French call it summer Castor or Beaver. The coat Beaver is that which has contracted a certain gross and



oily humour, from the sweat which exhales from the bodies of the savages, who wear it for some time: though this sort is better than the dry Beaver, it is used only in the making of hats.

The valuable drug castoreum is taken from the inguinal glands of these animals. The Russian castor is so much better than the American, that the former sells for two guineas a pound, and the latter about eight shillings and six-pence; the Russian castor being less waxy and more easily pulverised: but though we import this drug from Russia, we export to that country vast quantities of Beaver-skins. Castor is reckoned an excellent medicine in all nervous cases, particularly for hysterical fits, and many female disorders.

Beavers inhabit Europe, from Lapland to Languedoc; they are found in great plenty in the North; and sometimes they are met with in the Rhone, the Gardon, the Danube, the Rhine, and the Vistula. They are in great plenty in the Russian Asiatic dominions; but no where in greater multitudes than in North-America. The flesh of these animals is reckoned delicate food, being preserved, after the bones are taken out, by drying in the smoke: the tail, however, is esteemed as the choicest dainty.

#### The Musk BEAVER.

This animal has a thick blunt nose, large eyes, and short ears, which are almost hid in the fur. The toes on each foot are separated; those behind are fringed on each side with strong hair, closely set together: the tail is compressed sideways, is very thin at the edges, and covered with scales, intermixed with a few hairs. The head and body is of a reddish brown; and the breast and belly ash-coloured, tinged with red. The fur is very fine; and the length of the body, from nose to tail, is about twelve inches. The length of the tail is about nine inches, and the form of its body exactly resembles that of a Beaver. Charlevoix calls this animal the musk rat. It is a native of North-America, and breeds three or four times in a year, bringing forth from three to six each time: the male and female consort together during summer; and, when winter approaches, they unite in families, and retire into small round edifices, covered with a dome, composed of herbs and reeds cemented with clay. They have several pipes at the bottom of these edifices, through which they pass in search of food, as they are not so provident as the Beavers, in forming magazines. Their habitations, in winter, are covered many feet deep with snow and ice; but they creep out and feed on the roots that lie beneath. They erect a new habitation every year, and desert their old one. The fur of this animal is very soft, and much esteemed. The whole body of this creature has an exquisite musky smell during summer, which it loses in the winter.

#### The Long-Nosed BEAVER.

It has a long slender nose, and very small eyes, but no external ears: its tail is compressed sideways, and about eight inches long: the colour of the head and back is dusky, and the belly a whitish ash colour. The length of this animal, from nose to tail, is about seven inches. It inhabits Lapland, Russia, and the banks of the Volga and the Yaick. It never wanders far from rivers, and makes holes in the cliffs, with the entrance beneath the lowest fall of the water. It works upwards, but never so high as the surface, but so as to lie beyond the highest flow of the river. It feeds on fish, and is the prey of the pikes and siluri, but communicates to them so strong a flavour of musk as to make them unfit for food. The scent of this is like the former, especially about the tail. The skin of this animal is put into chests to keep the moths away.

#### NATURAL HISTORY of the PORCUPINE.

THE Porcupine is about two feet long, and fifteen inches high. It has a long crest on the top of the head, reclining backwards, formed of stiff bristles: the body is covered with quills from ten to fourteen in-

ches long, and very sharp at the points. Each quill is thickest in the middle, and inserted into the animal's skin, in the same manner as feathers grow upon birds: these quills are varied with black and white, and between them are a few hairs. The head, belly, and legs, are covered with strong bristles, terminated with soft hair of a dusky colour. Its whiskers are long, and its ears like human ears. It has four toes before, and five behind: its tail is short and covered with quills. All the quills of this animal naturally incline backwards like the bristles of an hog; but when the animal is irritated, they rise and stand erect, like bristles. The muzzle of this animal bears some resemblance to that of an hare, but it is black; the legs are very short, and the eyes small, like those of an hog, and measure only one third of an inch from one corner to the other.

The Porcupine partakes much of the nature of the hedge-hog, and, like that animal, has this formidable apparatus of arms rather to defend himself, than to annoy the enemy; for the opinion of its being able to dart its quills at its enemies, is now universally allowed to be fabulous: they are firmly fixed in the skin, and are only shed when the animal moults them, as birds do their feathers. Ellis, it is true, informs us, that a wolf was found dead at Hudson's Bay, with the quills of a Porcupine fixed within its mouth, but that might very naturally happen; for the wolf, in the rage of appetite, probably attempted to devour the Porcupine, quills and all, and paid for its temerity with its life. It is, however, certain that those Porcupines which have been brought into Europe, have never been known to launch their quills, though irritated to the highest degree. Dr. Shaw, who saw numbers of Porcupines in Africa, says none of them ever attempted to dart their quills; their usual method of defence being to lie down on one side, and at the approach of an enemy, to rise up suddenly and wound him with the points on the other. This animal, it is imagined, is seldom the aggressor, and when attacked by other animals, only directs its quills so as to keep always pointing towards the foe. In general he is then secure, and Kolben asserts that even the lion will not venture to attack him when he is thus on his guard.

Mr. Pennant says the Porcupine is an harmless animal, and lives on fruits, roots, and vegetables. Many other naturalists, particularly Dr. Goldsmith, say it chiefly hunts for serpents, and all other reptiles, for subsistence: that between the serpent and the Porcupine there exists an irreconcilable enmity, and that they never meet without a mortal engagement: that, upon these occasions, the Porcupine rolls itself upon the serpent, by which means it destroys it, and afterwards devours it. Those, however, which are brought to this country to be shewn, are usually fed on bread, milk, and fruits; but they have no objection to meat when it is offered them.

The Americans assure us that these animals live from twelve to fifteen years. The female goes with young seven months, and produces but one at a time, which she suckles about a month. In its defence she is intrepid, but, at other seasons, she is timid, fearful, and harmless.

The Porcupine is eagerly pursued by the Indian hunters, in order to make embroidery of its quills, and to feed on its flesh. With regard to their embroidery, they are very ingenious; they dye the quills of various colours, and split them into slips, with which they decorate their baskets, belts, and many other articles of furniture and ornament. The Porcupine is a dull and torpid animal; extremely voracious, though capable of enduring hunger. It is hardly possible to tame it, and the poet very properly gave it the epithet of fretful; for, when one of these animals was shewn in London, if any person did but touch the bars of the iron cage in which it was confined, it excited its resentment, and its quills were instantly erected.

The Porcupine inhabits India, Persia, Palestine, and every part of Africa: it is found wild in Italy, though not originally a native of Europe. It is brought into the markets of Rome, where it is sold for food. The Italian



Italian Porcupines have a smaller crest and shorter quills than those of Asia and Africa.

#### The Long-Tailed PORCUPINE.

This animal has large bright eyes, short naked ears, and long whiskers. Its body, which is short and thick, is covered with long stiff hairs as sharp as needles, of different colours as the rays of light fall on them. Its feet are divided into five toes, one of which turns backwards and serves as a thumb: the tail is about the length of the body, and very slender towards the end, which consists of a thick tuft; the bristles are thick in the middle, appear as if they were jointed, and are transparent and shining. This animal inhabits the islands of the Indian Archipelago, and lives chiefly in forests.

#### The Brazilian PORCUPINE.

This creature, which is also called the couando, is much smaller than the crested porcupine, and its quills are not above a fourth part of the length of those of that animal. It has a short blunt nose, and long white whiskers. It inhabits Mexico and Brasil, lives chiefly in the woods, and feeds on fruits and poultry. It sleeps in the day, and searches for food in the night. It makes a noise with its nostrils, as if out of breath, and grunts like a hog. It climbs trees, but with no great expedition, and, in descending, twists its tail (which is pretty long) round the branches to prevent its falling. Like the first, it is incapable of shooting its quills. This animal grows very fat, and its flesh is white and good. It is very easily tamed, and is a species very rarely brought into Europe.

#### The Canada PORCUPINE.

This animal, which Mr. Buffon calls the urson, has not so round a body as those already mentioned, but has more the resemblance of a pig in shape. It is covered with long bristly hair, with shorter hair underneath, under which great quantities of quills lie concealed. These quills are white, with a brown point, and bearded, and do not exceed four inches in length. These animals make their nests under the roots of large trees, sleep very much, and feed on wild fruits and bark of trees, especially upon the bark of the juniper. In winter the snow serves them for drink; and in summer they lap water like a dog. When they cannot escape their pursuer, they make towards him sideways, in order to wound him with the quills: but they are no very extraordinary weapon of defence; for, on stroking the hair, they will stick to the hand and come out of the skin. The Indians stick these quills in their noses and ears, to make holes for their ear-rings and other ornaments. The edges of their deer-skin habits are also trimmed with fringes made of these quills, and with them they decorate their bark boxes. These animals are very plentiful near Hudson's Bay, and many of the trading Indians make them their principal food, esteeming them both wholesome and delicate. Mr. Banks brought one of these animals from Newfoundland, which was about the size of a hare, but shorter and more compact; and the length of its tail was about six inches.

#### NATURAL HISTORY of the MARMOT.

THE Marmot is almost as large as a hare, but it is as corpulent as a cat, and has shorter legs. Its head somewhat resembles that of an hare, except that its ears are much shorter, and almost hid in the fur. The body is clothed with very long hair, and a shorter fur below. These are of different colours, brownish ash, mixed with tawny; and the legs and lower-part of the body are reddish. This animal has four toes before, and five behind; the length of its body from nose to tail is about sixteen inches; and its tail, which is tufted and well furnished with hair, is about six inches.

The Marmot is chiefly a native of the Alps, though it inhabits Poland, Ukraine, and Chinese Tartary. It feeds indiscriminately on insects, roots, and vegetables, but is remarkably fond of milk, and when lapping it,

makes a murmuring noise, expressive of its satisfaction. When pleased or caressed, it yelps like a puppy; but, when it is enraged, and before a storm, it has a piercing whistle which offends the ear. This is a very cleanly animal, but their bodies have a disagreeable scent, especially in summer. Its flesh is fat and firm and sometimes eaten, but the scent which is offensive in the living animal predominates after it is dead.

This creature is tamed without any difficulty, and is readily taught to dance, to wield a cudgel, and to obey the voice of its master. Like the cat, it has an antipathy to the dog; and, when it becomes familiar to the family, and is sure of being countenanced by its master, it will even attack a mastiff; but except in this particular, it is a very inoffensive animal; and, unless it is provoked, seems to live in friendship with every creature. It is, however, very apt to gnaw furniture or linen, and even to make holes through wooden partitions. As its legs are very short, and have some similitude to those of the bear, it will, like that animal, frequently sit up and walk upon its hind legs. Like the squirrel, it carries the food to its mouth with the fore-paws, and sits upon its hinder-parts to feed. The Marmot is usually taken to be shewn, especially by the Savoyards, who instruct them to perform a great variety of tricks to entertain the spectators.

But, what particularly distinguishes the Marmot from every other quadruped, except the bat, and the dormouse, is its sleeping during the winter. Though a native of the highest mountains, and where the snow is never wholly melted, it seems to feel the influence of the cold more than any other animal; and in winter its faculties are absolutely chilled up. About the end of September, or the beginning of October, the Marmot prepares its habitation for the winter, from which it never departs till April. This retreat is an hole on the side of a mountain, extremely deep, with a spacious apartment at the bottom, which is somewhat longer than it is broad. Several Marmots reside in this habitation at the same time, without incommoding each other, or injuring the air they breathe. The form of the hole resembles a Y; the two branches being two openings, which lead into one channel that terminates in their general apartment at the bottom. The whole being made on the declivity of a mountain, one of the openings issues out sloping downwards, serving as a kind of drain or sink to the whole family: the other opening, on the contrary, slopes upwards, and answers the purpose of a door. The apartment at the end is lined with moss and hay, of which they take care to make an ample provision during summer. This being a work of great labour, it is undertaken in common; some gather the grass, and others, in their turn, drag it into their hole.

In this retreat they all live together, after they have, with their united labours, made it as convenient as they can: there they remain when the storm is high, when it rains, or when they are apprehensive of danger. They never stir from their chamber but in fine weather, and then they never wander far from their habitation. When they venture from home, one of them is placed upon a lofty rock as a sentinel, while the rest are diverting themselves, or are employed in providing for their winter's convenience. When an enemy approaches, this trusty sentinel acquaints his companions with a whistle, when they all run immediately home, the sentinel bringing up the rear.

It must not be imagined that the hay is intended for provision; nature has kindly apprized them that during the winter they shall not want any. Therefore they make no preparations for food, but employ themselves diligently to render their apartment commodious. When they perceive the first approaches of winter, they close up the two entrances of their habitation, which they perform with such solidity, that it is easier to dig up the earth in any other part, than where they have closed it. At this time they are very fat, and continue so for two or three months; after which their flesh gradually diminishes, and by the end of the winter they are usually very lean. When their retreat is opened, the



the whole family is seen, each rolled into a ball, and covered with the hay. In this torpid state they appear entirely lifeless, and when they are taken from their habitation, they appear insensible, except they are brought before a fire, which soon revives them; but they would die if they were too suddenly brought before a large fire.

From what has been said, we may form some conception of the state of these animals which exist half the year without food. It is well known that in those disorders where the circulation is extremely languid, the appetite is proportionably diminished; so, in these animals, as the blood scarce moves, or only moves in the larger vessels, they require no nourishment to supply what is worn away by its motions. Indeed they gradually become somewhat leaner, but even that is not perceptible for some months. With motion enough in their fluids to keep them from putrefaction, and nourishment enough to supply the waste of their languid circulation, they continue rather feebly alive than sleeping.

These animals produce but once a year, and bring forth two or three at a time: the extent of their lives is about nine or ten years.

#### The Maryland MARMOT.

This animal is about the size of a rabbit, and in other respects greatly resembles the former, except in having a bluish snout, and a longer tail. It is found in Virginia, Pennsylvania, and the Bahama Islands. It lives on wild fruits and other vegetables; and during winter, it sleeps under the hollow roots of trees. Its flesh is excellent, and somewhat resembling that of a pig. When surprized it retreats to holes in rocks. We have no certain information whether this animal sleeps during winter, in the climate of these islands.

#### The Quebec MARMOT.

This has short round ears, a blunt nose, puffed cheeks, and a dusky face. The hair on the back is grey at bottom, black in the middle, and whitish at the tips. The belly and the legs are of an orange colour; the toes are black, naked, and quite divided. It has four toes, and the rudiments of another on the fore-feet, and five on those behind. Its tail is short, and of a dusky colour, and the body is somewhat larger than that of a rabbit. It inhabits Hudson's-Bay and Canada.

#### The German MARMOT.

This animal has full black eyes, and large rounded ears; the colour of the head and face is of a reddish brown, and the cheeks white. It has a white spot on each ear, another on each shoulder, and another on each side near the hind legs. The tail is short, and almost naked. It has four toes and a fifth claw on the fore-feet, and five toes behind. The length of the body is about nine inches, and the tail three inches. It is found in Austria, Silesia, and many parts of Germany and Poland. It devours great quantities of corn, and carries still more to its winter's hoard. It has two pouches within its cheeks, which are receptacles for its booty, and are so capacious as to hold a quarter of a pint; these it crams so full that the cheeks seem as if they were ready to burst.

They live under ground; at first they burrow down obliquely, and form an entrance; and at the end of that passage, the male makes one perpendicular hole, and the female several: various vaults are formed at the end of these, serving as lodgings for themselves and their young, and as store-houses for their winter food: each animal has its different apartment, and every sort of grain its different vaults. The lodging apartments are lined with straw or grass, and these apartments are of different depths according to the age of the animal; some not exceeding a foot deep, and others four or five.

In August they begin to lay in their provisions, consisting principally of corn, peas, and beans; and when they have finished their work, they carefully stop up the mouth of their passage. In winter the peasants go to what they call hamster-nesting; and, having found the retreat, they dig till they have discovered the hoard, and

are amply rewarded for their trouble; for exclusive of the skins of the animals, which are valuable furs, they usually find two or three bushels of good grain in the magazine.

These animals are extremely fierce, and make a noise like the barking of a dog: they breed twice or three times a year, and usually bring five or six at a time: they are so very numerous in some seasons, as to occasion a dearth of corn: they would indeed be more numerous than they are, but vast numbers of them are destroyed by pole-cats, which pursue them into their holes. It is remarkable that the hair of these animals sticks so close to the skin, that it is extremely difficult to pluck it off.

#### The Casan MARMOT.

It is about the size of a rat, and has short round ears. The hair is smooth and of a yellowish brown, with faintish round spots of white. It has four toes before, and five behind, and the tail is about half the length of the body. It inhabits the banks of the Volga. These animals burrow, and sit in multitudes near their holes like rabbits; and when they are alarmed, they whistle with a low note. They are excessive fond of salt, and vast quantities of them are taken on board the barges that load with that commodity at Solikamsky, and fall down into the Volga, below Casan.

#### The Lapland MARMOT.

This animal has a pointed head, with two very long cutting-teeth in each jaw. Its upper-lip is divided; it has small black eyes, a little mouth, long whiskers, and small blunt ears, reclining backwards. Its legs are very short, and it has four slender toes, covered with hair on the fore-feet, and five toes on those behind: the body and head are about five inches long, and the tail half an inch. The body and head are black and tawny, disposed in irregular blotches, and the belly is of a yellowish white.

These animals appear in immense quantities at uncertain periods in Norway and Lapland. They are indeed the pest and astonishment of the country: they march in troops like the army of locusts, so emphatically described by the prophet Joel. They destroy almost every blade and root of grass, and spread universal desolation: they even infect the ground, and cattle are said to perish which taste the grass that they have touched. They march in legions, and neither fire, lakes, nor torrents, can stop their progress. They bend their course strait forward, and swim over the lakes and rivers. They are so fierce as not to be intimidated in their career, and if a stick is presented to them, they will take hold of it and suffer themselves to be swung about before they will quit their hold. If they are struck, they bark like a dog, and turn about and bite. They are the prey of foxes, lynxes, and ermines, who follow them in troops. At length they perish through want of food, or destroy each other; or they are lost in the sea, or some great water.

Fortunately for the country, this phenomenon does not frequently occur, and is not seen above once or twice in twenty years. It seems like a vast colony of emigrants from a nation overstocked. From what country these animals have travelled, is not certainly known. We are told by Linnæus that they come from the Norwegian and Lapland Alps. Pontoppidan is of opinion that Kolen's rock, which divides Nordland from Sweden, is their native place: but, wherever they come from, it is certain that they never return. Their course seems to be predestinated, and they pursue their fate. It was once seriously believed, that these animals were generated in the clouds, and fell in showers upon the earth.

#### The Earless MARMOT.

This animal has no external ears, having only a small orifice on each side of the head for the admittance of sounds. It has a blunt nose, a long slender body, and a very short tail. Its colour is a dark grey, or a yellowish brown.

The *Marmotta minor* is the same animal with this, but



but differs a little in colour: the upper-part of the body of the *Marmotta Minor* is grey, with some red spots, speckled with yellow. It inhabits Bohemia, Austria, Hungary, and Siberia. It burrows, and forms a magazine of corn, nuts, &c. for its winter provision. The ladies of Bohemia formerly made cloaks with the fur of this animal.

#### The Podolian MARMOT.

The cutting-teeth of the lower-jaw of this animal are half as long again as those of the upper: the eyes are extremely small, and almost hid in the fur, like those of a mole. It has four toes and a claw on the fore-feet, and five on the hind, and is of an ash-colour. It is about the size of a squirrel, and has a short tail. It inhabits Podolia, Ukraine, Volhinia, and Persia. This animal also burrows, and forms magazines for winter food. It feeds on corn, fruits, and herbs, and lives underground during the winter, in which season the peasants frequently turn them up with their ploughs.

#### The Circassian MARMOT.

This animal has red sparkling eyes, sharp teeth, and ears resembling those of mice. Its body is long, and of an equal thickness. Its hair is long, and of a chestnut colour: it has sharp claws, a long bushy tail, and its fore-feet are shorter than those behind. It is about the size of the German Marmot. This animal is found in the neighbourhood of the river Terek, which flows out of Circassia and falls into the Caspian Sea: it runs up hill very fast, but very slowly down. This creature also burrows, and lives under ground.

#### NATURAL HISTORY of the SQUIRREL.

**T**HIS animal is so well known as hardly to require any description; but supposing it unknown to any, we might convey some idea of its form by comparing it to a rabbit, observing that it has shorter ears and a longer tail. Its ears are also terminated with long tufts of hair. The colour of the head, body, tail, and legs, of this animal, is a bright reddish brown; the belly and breast white: the eyes are large, black, and lively: the fore-teeth strong, sharp, and well adapted to its food: the legs are short and muscular; the toes long, and divided to their origin; the nails are sharp and strong. In short, the animal, in all respects, is fitted for climbing or clinging to the smallest boughs. It has but four toes on the fore-feet, and a claw in the place of a thumb or interior toe: there are five toes on the hind-feet. The tail of the Squirrel is alone sufficient to distinguish it from any other animal, as it is extremely long, beautiful, and bushy, spreading like a fan, and, when thrown up behind, serves to cover the whole body. When erected, it also serves the little animal as an umbrella, to defend it from the injuries of heat and cold; and, when extended, it is extremely serviceable in taking those vast leaps that the Squirrel takes from tree to tree. It indeed answers another purpose: we are assured by Kleim, Scheffer, and Linnæus, that when the Squirrel is disposed to cross a river, a piece of bark is its boat, and its tail answers the purpose of a sail.

The Squirrel is a beautiful little animal, which may be said to be but about half savage; and which, from its docility and innocence, is deserving of our protection. It is neither carnivorous nor destructive; and its common food is nuts, fruits, buds, and acorns. It is cleanly, nimble, active, and industrious. Like the hare and rabbit, it sits upon its hinder legs, using the fore paws as hands. The Squirrel seldom descends to the ground, except during a storm, but jumps from one branch of a tree to another. This provident little animal never leaves its food to chance, but in summer, which is the season of plenty, it secures in some hollow tree a vast magazine of nuts for winter provision; cautiously foreseeing the dreary season, when the forest shall be stripped of fruits and foliage. In the spring it is diverting to observe the female feigning an escape

from the pursuit of two or three lovers, and to observe the various proofs they give of their agility, which is then exerted in its full force.

The Squirrel never appears in the open fields, nor in the coppices or underwoods. It always keeps among the tallest trees, and avoids as much as possible the habitations of men. It makes its nest of moss and dried leaves, between the fork of two branches, and brings three or four young at a time. It has two holes to its nest, and, as Pliny justly remarks, always stops up that on the side the wind blows. It is extremely vigilant, and if any person should touch the bottom of the tree in which it resides, the Squirrel immediately takes the alarm, flies away to another tree, and travels with great ease along the tops of the forest, till it is perfectly out of danger. When the alarm is over, the animal returns to its nest, by paths that are utterly impassable to any other quadruped. It usually moves by bounds or leaps, and with great facility passes from one tree to another, at the distance of forty feet; and when it is compelled to descend, it runs up the side of another tree with amazing agility. It usually expresses pain by a sharp piercing note, and has another note, expressive of its pleasure or satisfaction, not much unlike the purring of a cat.

The little mansion of the Squirrel is sometimes attacked by a most formidable enemy: the martin is incapable of making a nest for itself, and therefore frequently goes in quest of a retreat for its young; for this purpose it generally fixes upon the nest of a Squirrel, and destroys the tenant to take possession of the mansion. But this calamity does not often happen, and Squirrels may be said to lead the most playful frolicsome life of almost any other animal. The time of their gestation is six weeks, and they bring forth about the middle of May.

Having already just mentioned the Squirrel's mode of sailing, it may not be thought impertinent to give a particular description of it. When these animals, in their progress, meet with broad rivers or extensive lakes, which are very numerous in Lapland, they return into the neighbouring forest, as if by common consent, each in quest of a piece of bark, serving as so many boats to waft them over. When they are all equipped, they boldly commit their little fleet to the mercy of the waves, every Squirrel being seated on its own piece of bark, and fanning the air with its tail, to conduct the vessel to its desired haven. In this manner they frequently cross lakes which are several miles over: but the poor little mariners are not always aware of the dangers of their navigation; for though the water may be calm towards the edges, it is generally more turbulent towards the middle. An additional gust of wind sometimes overturns the whole navy, and a shipwreck of three or four thousand sail ensues. This dreadful catastrophe is generally a lucky accident for the Laplander on the shore, who collects the dead bodies which are thrown up by the waves, feeds upon the flesh, and gets a good price for the skins.

The Squirrel is easily tamed, and becomes a very familiar animal. It delights in warmth, and frequently creeps into a man's pocket or his bosom. It is usually kept in a box, and fed with hazle-nuts, &c. and is a pleasing little domestic. This animal inhabits Europe, North America, and the northern and the temperate parts of Asia. A variety of them is found as far south as the isle of Ceylon. In Sweden and Lapland the colour changes into grey in winter. In Russia and Lapland black Squirrels are sometimes found; and in many parts of England there is a beautiful variety with milk-white tails.

#### The CEYLON SQUIRREL.

This animal is about three times the size of the European Squirrel; its ears are tufted with black, its nose is flesh-coloured, its cheeks, legs, and belly are of a pale yellow, and its forehead, back, sides, and haunches are black. The tail is of a light grey, bushy, and twice the length of the body. It is an inhabitant of Ceylon.



### The BOMBAY SQUIRREL.

This is an inhabitant of Bombay. The ears are tufted; the head, back, and sides are of a dull purple; the belly, and the lower part of the legs and thighs are yellow, and the tip of the tail is orange-colour: the length of the body, from nose to tail, is about sixteen inches, and the tail seventeen. Dr. Hunter had a stuffed skin of this animal in his cabinet.

### The GREY SQUIRREL.

The hair of this animal is of a dull grey colour, mixed with black, and sometimes tinged with yellow: the belly and the insides of the legs are white; the ears are plain, the tail is long, bushy, and grey, with black stripes. This animal is about the size of an half-grown rabbit. It inhabits the woods of Northern Asia, North America, Peru, and Chili. These animals abound in North America, where they do incredible damage to the plantations of maize, by running up the stalks, and eating the young ears. A reward of three-pence per head is allowed by the provinces for every one that is killed; and Pennsylvania alone paid in rewards eight thousand pounds of its currency for what was destroyed in one year. These animals make their nests in hollow trees, with moss, straw, wool, &c. They feed on maize, pine-cones, acorns, and mast of all kinds. They make holes in the ground, where they deposit a large stock of provision for the winter. When they are in want of meat, they descend from the trees, and visit their magazines; and, during the cold season, they confine themselves to their nests for several days together. They run up and down the trunks of trees, but seldom leap from branch to branch. In many particulars they have the actions of the common Squirrel, and are very easily tamed. This animal is called *le petit gris* by Mr. Buffon, and the furs of this animal, which are imported under the name of *petit gris*, are very valuable. The flesh of this Squirrel is reckoned very delicate.

### The BLACK SQUIRREL.

This animal is sometimes entirely black, but is generally marked with white on the nose, the neck, or the tip of the tail. It has plain ears, and its tail is shorter than that of the grey Squirrel, though its body is about an equal length. It is found in Asia, North America, and Mexico. Like the former, it makes great havock among the maize, and, like that animal, makes its nest in a hollow tree, and provides a store for the winter.

### The VARIED SQUIRREL.

It is about twice the size of the common Squirrel, and has plain ears. The upper part of the body is varied with black, white, and brown, and the belly is tawny. It is a native of Mexico, and lives under ground, where it brings forth its young, and deposits a stock of food for the winter. It lives principally on maize, and is so fierce, that it cannot possibly be tamed.

### The BRASILIAN SQUIRREL.

The Brazilian Squirrel, which Mr. Buffon calls the *coquallin*, is a very beautiful animal, and remarkable for the variety of its colours. The head and body are variegated with white, black, brown, and orange colour; the inside of the legs and the belly are of a bright yellow. The tail, which is annulated with black and yellow, is about ten inches long, and the body from nose to tail about eight inches. It has no tuft at the extremity of the ears, nor does it climb the trees like most of the kind. It inhabits Brasil and Guiana.

### The GROUND SQUIRREL.

The nose and feet of this animal are of a pale red; the eyes are full, and the ears plain. The ridge of the back is marked with a black streak, and each side with a pale yellow stripe, bounded above and below with a line of black. The head, body, and tail, are of a reddish brown, and the breast and belly white. It inhabits the North of Asia, and is found in great abundance in

the forests of North America. These animals never run up trees, except they are pursued, and cannot escape by any other means. They burrow, and form their habitations under ground, with two avenues, that they may get access to one, if the other is stopped up. Their retreats are ingeniously contrived, in the form of a large gallery, with branches on each side, and at the end of each branch a large chamber, serving as a magazine to store their winter provision in. They deposit the acorns in one, the maize in another, the hickory nuts in a third, and their favourite food, the chinquapin chesnut, in the fourth. If their provisions hold out, they seldom stir from their apartment during winter; but when that is exhausted, they dig into cellars where apples are kept, or barns where maize is stored, and do incredible mischief; however, vast numbers of them are then destroyed by cats, which are inveterate enemies to them as well as to mice. These animals bite severely, and are so extremely wild, that it is hardly possible to tame them. Their skins are of very little value, but they are sometimes used for the lining of cloaks.

### The FAT SQUIRREL.

This animal, which is called *Le loir* by Mr. Buffon, is clothed with soft ash-coloured hair; the belly being a little whitish. Its length from nose to tail is about six inches, and its tail four and an half. It inhabits France, and the South of Europe: it lives in trees, leaps from bough to bough, and feeds on fruits and acorns. It grows very fat, lodges in the hollow of trees, and continues in a torpid state during winter.

### The GARDEN SQUIRREL.

The head and body of this animal is of a tawny colour; the throat, and all the under side of the body, white tinged with yellow. The eyes are surrounded with a large spot of black, reaching to the base of the ears, and another appears behind the ears: the length, from nose to tail, is about five inches, and the tail four. It inhabits France, and the South of Europe; infests gardens, and is very destructive to fruits of all kinds, particularly peaches. It lodges in holes in the water, and brings forth five or six young at a time. It remains torpid during the winter, and has a strong smell like a rat.

### The DORMOUSE.

This animal agrees with the Squirrel in its food, residence, and some of its actions. It has round naked ears, full black eyes, and a white throat. It is about the size of a mouse, but plumper, and its body is of a tawny red. Its tail is two inches and an half long, and pretty hairy, especially towards the end. It inhabits woods or thick hedges, forming its nest in the hollow of some low tree, or near the bottom of a close shrub. As it wants much of the sprightliness of the Squirrel, it never aspires to the tops of trees, or to sport among the branches.

Like the Squirrel, towards the approach of the cold season they form a little magazine of nuts, beans, or acorns, for winter provision; and they take their food in the same manner, and in the same upright posture as that animal. The consumption of their hoard, during the rigour of the winter, is but small, for they sleep the greatest part of the time: they retire into their holes, roll themselves up in a ball, and lie almost torpid the greatest part of that gloomy season. In that space they sometimes experience a short revival, by the warmth of a sunny day, or an accidental change from cold to heat, which in some degree thaws their stagnant fluids, when they take a little of their provision, and then relapse into their former state.

In this manner they continue usually asleep, and only wake occasionally, for above five months in the year, seldom venturing from their retreats, or in any open place, and consequently are but seldom seen: for which reason they seem less common in England than they really are. Their nests are made of moss, grass, and dead leaves; they



# QUADRUPEDS

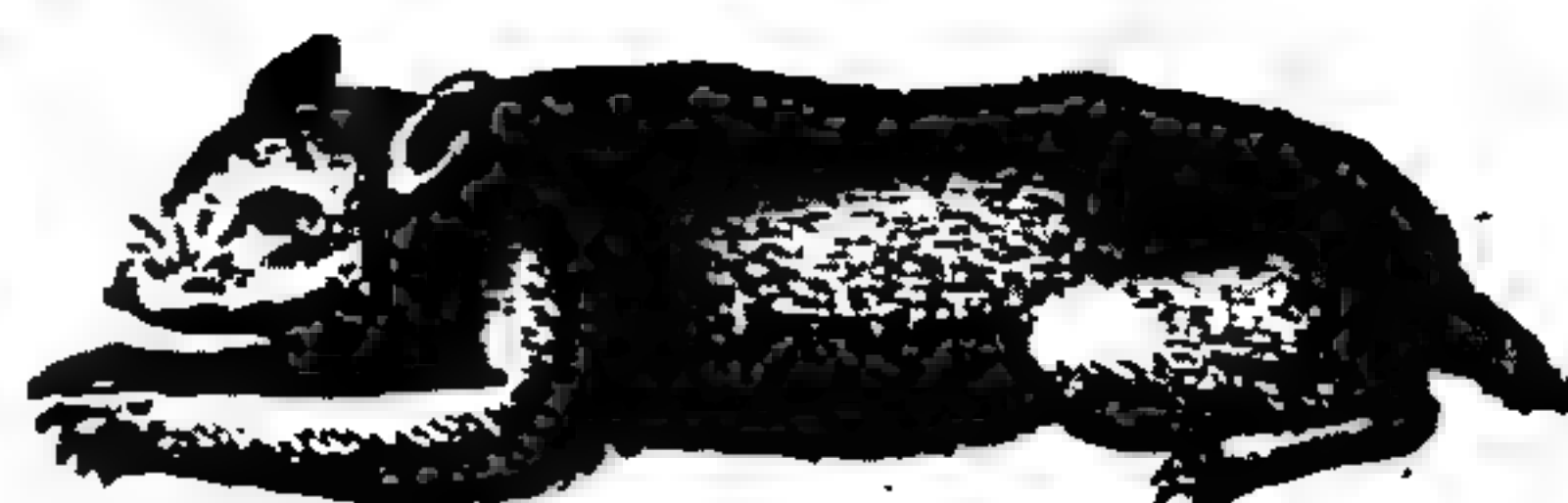
*The* RAT



*The* GROUND RAT



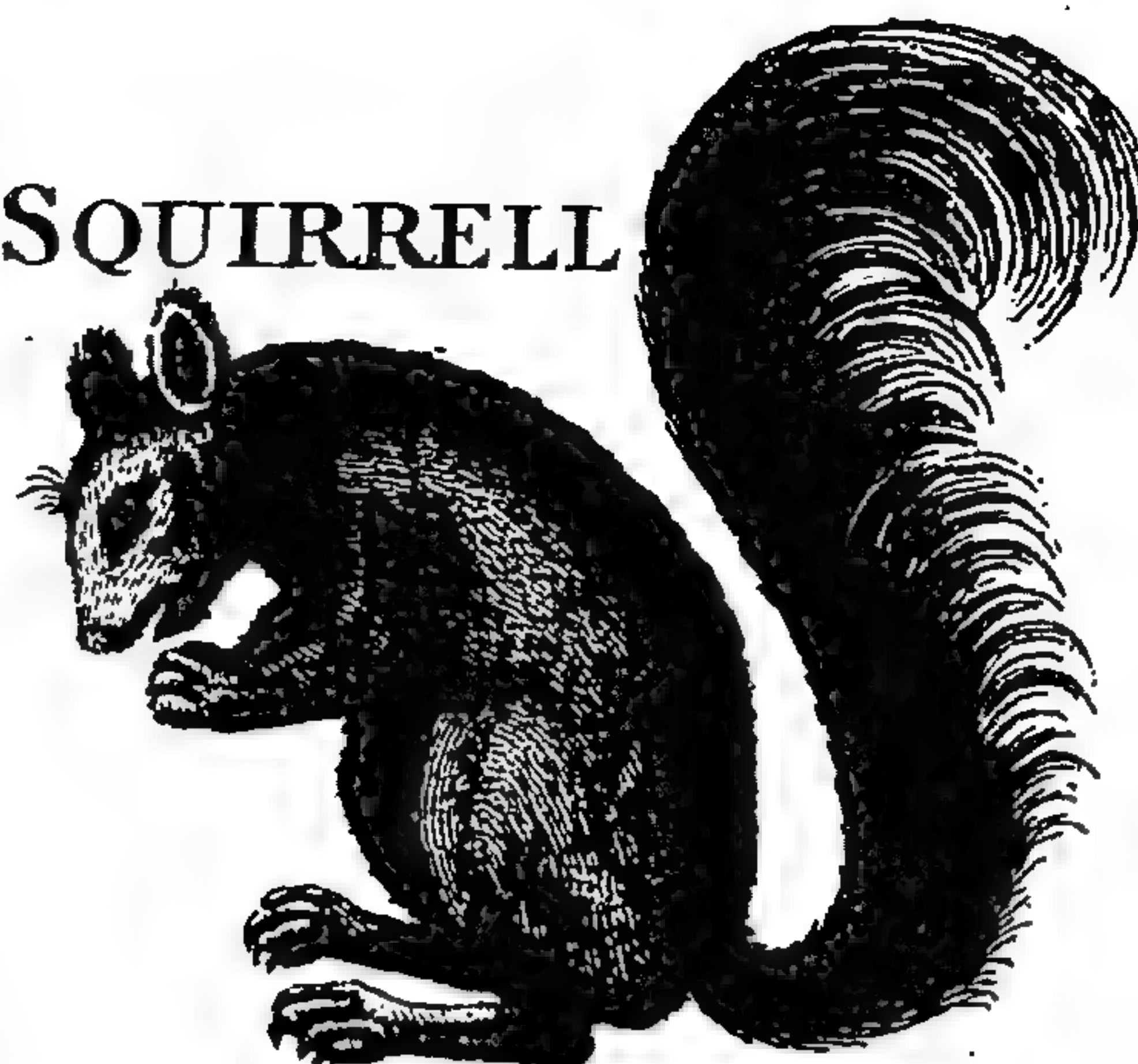
*The* CITILLE



*The* PACOS



*The* SQUIRRELL



*The* PICA

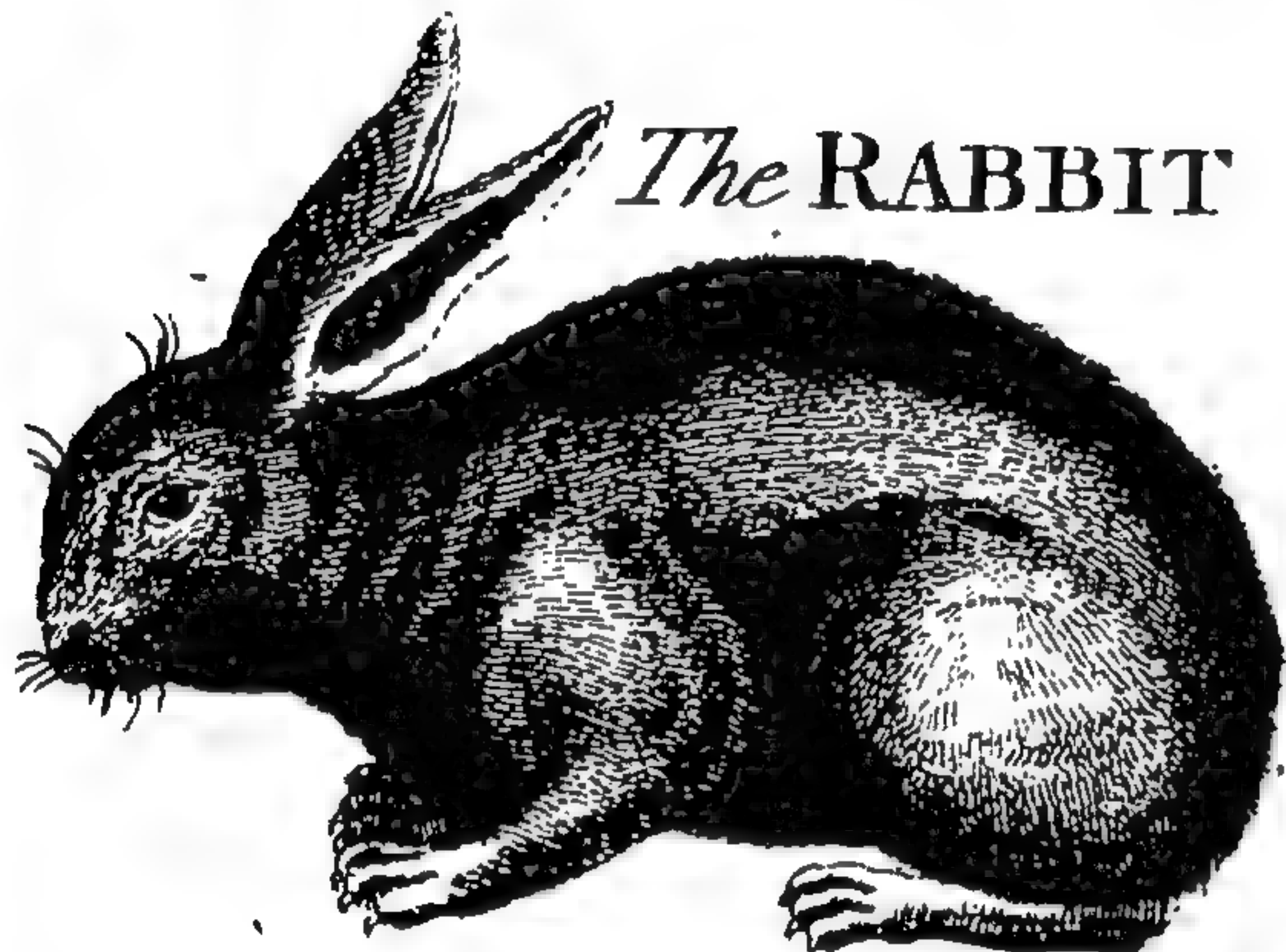


*The* HARE

*The* BONASSUS



*The* RABBIT



*The* AGUTI



*The* BEAVER



*The* PORCUPINE



*The* OPOSSUM



they usually bring forth three or four young at a time, and that but once a year, which is in the spring.

#### The SAILING SQUIRREL.

This animal has a small rounded head, small blunt ears, a short neck, a cloven upper-lip, and two small warts at the outer corner of each eye, with hairs growing on them. It has four toes on the fore feet, and instead of a thumb, a slender bone, two inches and a half long, lodged under the lateral membrane, serving to stretch it out. From thence to the hind legs extends the membrane, which is broad, and a continuation of the skin of the sides and belly. On the hind feet it has five toes, with a sharp bending claw on each. The tail is covered with long hair, disposed horizontally. The colour of the head, body, and tail, is a bright bay, inclining to orange in some parts. The breast and belly are of a yellowish white. The length of this animal, from the nose to the tail, is about eighteen inches, and the tail fifteen. It inhabits Java, and some other Indian islands; leaps from tree to tree as if it flew, and catches hold of the boughs with its tail. These animals are different in size: Linnæus describes one about the size of our Squirrel, and Sir Edward Michelbourne killed one in one of the Indian isles that was larger than a hare. Nieuhoff describes this species under the name of the flying-cat.

#### The FLYING-SQUIRREL.

This little animal, which is frequently brought over to England, is less than a common Squirrel, and larger than a field mouse. Its skin is very soft, and elegantly adorned with a dark fur in some parts of the body, and a light grey in others. It has round naked ears, large prominent sparkling eyes, and very sharp teeth, with which it gnaws any thing very expeditiously. It has

a lateral membrane, extending from the fore to the hind legs, and its tail is covered with long hair disposed horizontally. When it does not leap, its tail lies close to its back; but when it takes its spring, the tail moves backwards and forwards from side to side. This animal at a single bound, will dart from one tree to another at above twenty yards distance, but it sinks considerably before it can reach the place it aims at: sensible of this, it mounts the higher in proportion to the distance it intends to reach. It is assisted in this spring, by a very peculiar formation of the skin or membrane, which extends from the fore feet to the hinder; so that when it stretches its fore legs forward, and its hind legs backward, this skin is extended between them, somewhat like that between the legs of a bat. Thus the little animal keeps buoyant in the air, till the force of its first impulse is expired, and then it descends.

The flying Squirrel, however, does not move like a bird, by repeated strokes of its wings, but rather in the manner of a paper kite, supported by the expansion of the surface of its body, which renders it specifically lighter than it would otherwise be.

This animal inhabits Finland, Lapland, Poland, Russia, North-America, and New Spain. Like the common Squirrel, it is usually found on the tops of trees; but, though better calculated for leaping, it is of a more torpid disposition, and seldom exerts its powers; it therefore frequently becomes the prey of the martin and pole-cat. It is not, like most other squirrels, fond of almonds or nuts, its favourite food being the sprouts of the birch, and the cones of the pine. Though easily tamed, it embraces the first opportunity of deserting. When in its tame state, it is fed with bread and fruits; and generally sleeps by day, though it is very sprightly and agile in the night. These animals usually bring forth three or four young at a time, and live in hollow trees.

## C H A P. XII.

*Containing the NATURAL HISTORY of the RAT; the MOUSE; the MOLE; and their Varieties.*

**I**F we look through the different ranks of animals, from the largest to the smallest, from the enormous elephant to the diminutive mouse, we shall discover that we suffer greater injuries from the contemptible meanness of the one, than the formidable invasions of the other. We can oppose united strength and art against the elephant, the rhinoceros, or the lion: those we have driven into their native solitudes, and compelled them to remain at a distance, in the most inconvenient regions, and disagreeable climates. But no force can be exerted against their unresisting timidity, no arts can diminish their astonishing increase: legions of rats may be destroyed in an instant, yet the loss is quickly repaired. Nature, which has denied them strength, has supplied the defect by their fecundity.

#### NATURAL HISTORY of the COMMON RAT.

**O**F all our smaller quadrupeds, the Rat is the most pernicious. Our meat, corn, paper, cloaths, furniture, and every convenience of life is a prey to this destructive animal; and it makes equal havoc on our poultry, rabbits, or young game. It is to be lamented that it is a domestic animal, always residing in houses, barns, or granaries; and nature has furnished it with such very strong fore-teeth, that it can force its way through the hardest wood or the oldest mortar: it makes an habitation either for its temporary residence, or for a nest for its young, in a hole near a chimney: when it is intended for a nest, it improves the warmth

of it, by forming a magazine of bits of cloth, hay, straw, or wool.

This animal breeds several times in the year, and usually brings forth six or seven young at a time. This species frequently overstock their abode by their fecundity, which obliges them, through deficiency of food, to devour each other. Happily for us, this unnatural disposition prevents even the human race from becoming a prey to them; though indeed there are some instances of their gnawing infants in their sleep.

The common enemy of the Rat is the weasel, which makes infinitely more destruction among them than the cat; the weasel having more agility, and, from the slender form of its body, is enabled to pursue them through all their retreats, which the former cannot. The Norway Rat has greatly reduced their numbers, and in many places almost extirpated them.

Though the common Rat is an animal so universally known, a brief description of it may be excused. The length from the nose to the tail, is about seven inches long, and the tail near eight inches: the nose, which is sharp-pointed, is furnished with long whiskers; the colour of the head, and the whole upper-part of the body, is a deep iron-grey, bordering on black; the throat and belly are of a dirty white, inclining to grey; the feet and legs are almost naked, and of a dirty pale flesh colour. The tail is covered with small dusky scales, mixed with a few hairs, which adds to the general deformity of its detestable figure. The fore-feet want the thumb or interior toe, having only a claw in its place: the hind feet are furnished with five toes.



This animal was first introduced into America by the Europeans, and into South-America about the year 1544, when Blasco Nunnez was the viceroy; it is now become the pest of all that continent. It was formerly so great a nuisance that the king of England had a Rat-catcher belonging to his household, which is continued in office to this day by his Britannic majesty; distinguished in a peculiar by his dress, which is scarlet, embroidered with yellow worsted, decorated with the figures of mice destroying wheat-sheaves.

#### The Norway Rat.

There is no possibility of our deriving any advantage from the destruction of the common Rat, since they are replaced by such mischievous successors; the Norway Rat having the same disposition with the common kind, with greater abilities of doing mischief. This animal never made its appearance in England till about fifty years ago. It burrows in the banks of rivers, ponds, and ditches; takes the water very readily, and swims and dives with great celerity. It does incredible damage to those mounds which are raised to prevent ponds and rivers from overflowing. It forms its holes very near the edge of the water, where it chiefly resides during the summer, and feeds upon small animals, fish, and corn. When the winter approaches, it comes nearer the farm-houses, and burrows in their corn, where it consumes much, but destroys more. Nothing, in short, that can be eaten, escapes the voracity of this creature. It destroys rabbits, poultry, and all kinds of game; and hardly any of the feebler animals can escape its rapacity, except the mouse, which shelters itself in its little hole, that cannot receive an animal so large as the Norway Rat.

Mr. Buffon, and after him Dr. Goldsmith, say these animals frequently bring forth from fifteen to thirty at a time. Mr. Pennant says they produce from fourteen to eighteen young at a time. The bite of these animals is not only severe but dangerous; the wound being immediately attended with a great swelling, and requires a considerable time to heal. These creatures are sometimes so daring as to turn upon their pursuers, and endeavour to fasten on the stick or hand of the person who attempts to strike them.

The head, back, and sides of this animal are of a light brown colour, mixed with tawny and ash-colour; the breast and belly of a dirty white; the feet naked, and of a dirty flesh colour; the fore feet are furnished with four toes, and a claw instead of the fifth. Its length from the nose to the tail, is about nine inches, and the tail the same. It is principally in colour that this animal differs from the black Rat, or what was once called the common Rat, which is now no longer common. This new invader is much stronger; and, since its arrival, has found means to destroy almost the whole species, and to possess itself of their retreats.

Not only the black Rat, but all other animals of inferior strength, were obliged to submit to the rapacity of the Norway Rat. The frog was utterly incapable of combat or defence. It had been purposely introduced into Ireland some years before the Norway Rat, and began to multiply exceedingly. The inhabitants were pleased with the introduction of a harmless animal, that served to rid their fields of insects, and, as they imagined, contributed to render their waters more wholesome. But the Norway Rat soon put a period to their propagation: for being of an amphibious nature, it pursued the frog to its lakes, and seized it in its own natural element. The frog is therefore once more become almost extinct in that kingdom; and the Norway Rat, having fewer animals to destroy, and consequently a smaller portion of provision, is also grown less numerous.

The great increase of these animals would over-run the whole country in a short time, did they not destroy each other. The large male Rat usually keeps in a hole by itself, and is dreaded by its own species as the most formidable of enemies. Thus are these pernicious creatures kept within due bounds; and that their increase may not too much incommode mankind, it is repressed by their own rapacity.

All the stronger carnivorous animals have natural antipathies against the Rat. The dog, though he detests their flesh, pursues them with great alacrity, and attacks them with great animosity. Such as are accustomed to killing these vermin, dispatch them with a single squeeze; but those which shew any hesitation are sure to be sufferers; the Rat always taking the advantage of a moment's delay, and, instead of waiting for the attack, becomes the aggressor, and seizes its enemy by the lip, often inflicting a very dangerous wound.

Another enemy of these animals is the cat; and yet many of them are unwilling to attack the Rat, or to feed upon it when killed. Some of them indeed will pursue and seize the Rat, though they often meet with an obstinate resistance. If very hungry, the cat will sometimes eat the head, but it is generally satisfied with its victory alone. The weasel is a much more dangerous foe to these vermin; but man has contrived a variety of methods of destroying these noxious intruders.

The Rat being so pernicious a creature, we shall add the two following receipts, as they are said to be effectual for destroying those disagreeable vermin.

The first has the sanction of the Dublin society, who, on the 19th of November, 1762, ordered a premium of five guineas to one Laurence O'Hara, for this discovery, which is, "One quart of oatmeal, four drops of rhodium, one grain of musk, and two nuts of nux vomica, finely rasped." This mixture is to be made up in pellets, and laid in the holes and places which the Rats frequent.

The other receipt is thus: "take of the seeds of slaves-acre, or louse-wort, powdered, one fourth part, and of oatmeal three parts; mix them well, and make them up into a paste with honey. Lay pieces of it in the holes, and on the places frequented by Rats or mice, and it will kill such of those vermin as eat of it."

The first step taken by Rat-catchers, in order to clear a house, &c. of those vermin, is to allure them all together to one proper place, before they attempt to destroy them; for there is such an instinctive caution in these animals, accompanied with a surprising sagacity in discovering any cause of danger, that if any of them are hurt, or pursued in an unusual manner, the rest take the alarm, and become so shy and wary, that they elude all the devices and stratagems of their pursuers for some time after. This place, where the Rats are to be assembled, should be some closet, or small room, into which all the openings but one or two may be secured; and this place should be, as near as possible in the middle of the house, or buildings. It is the practice therefore to attempt to bring them all together in some such place, before any attempt be made to take them; and, even then, to avoid any violence, hurt, or fright to them, before the whole are in the power of the operator. The means used to allure them to one place are various: one of those most easily and efficaciously practised is, the trailing some piece of their most favourite food, which should be of the kind that has the strongest scent, such as toasted cheese, or broiled red-herring, from the holes or entrances to their accesses in every part of the house or contiguous buildings, whence it is intended to allure them. At the extremities, and in different parts of the course of this trailed track, small quantities of meat, or any other food, should be laid, to bring the greater number into their tracks, and to encourage them to pursue it to the center place, where they are intended to be taken. At that place, where time admits of it, a more plentiful repast is laid for them, and the trailing repeated for two or three nights.

Besides this trailing and way-baiting, some of the most expert of the rat-catchers have a shorter, and perhaps more effectual method of bringing them together; which is, the calling them, by making such a kind of whistling noise as resembles their own call; and by this means, with the assistance of the way-baits, they call them out of their holes, and lead them to the repast prepared for them at the place designed for taking them. But this is much more difficult to be practised than the art of trailing; for the learning the exact



notes, or cries of any kind of beasts or birds, so as to deceive them, is a peculiar talent, not easily attained to in other cases.

In the practising either of these methods, of trailing or calling, great caution must be used by the operator, to suppress and prevent the scent of his feet and body from being perceived; which is done by overpowering that scent by others of a stronger nature. In order to this, the feet are covered with cloths rubbed over with assa foetida, or other strong smelling substances; and even oil of rhodium is sometimes used for this purpose, but sparingly, on account of its dearness, though it has a very alluring, as well as disguising effect. If this caution of avoiding the scent of the operator's feet, near the track, and in the place where the Rats are proposed to be collected, be not properly observed, it will very much obstruct the success of the attempt to take them; for they are very shy of coming where the scent of human feet lies very fresh, as it intimates, to their sagacious instinct, the presence of human creatures, whom they naturally dread. To the above mentioned means of alluring by trailing, way-baiting, and calling, is added another of very material efficacy, which is the use of the oil of rhodium, which, like the marum lyriacum in the case of cats, has a very extraordinary fascinating power on these animals. This oil is extremely dear, and therefore sparingly used. It is exhaled in a small quantity in the place, and at the entrance of it, where the Rats are intended to be taken, particularly at the time when they are to be last brought together, in order to their destruction: and it is used also by smearing it on the surface of some of the implements used in taking them by the method below described: and the effect it has in taking off their caution and dread, by the delight they appear to have in it, is very extraordinary.

It is usual, likewise, for the operator to disguise his figure as well as scent; which is done by putting on a sort of gown or cloak, of one colour, that hides the natural form, and makes him appear like a post, or such inanimate thing; which habit must likewise be scented as above, to overpower the smell of his person: and besides this, he is to avoid all motion, till he has secured his point of having all the Rats in his power.

When the Rats are thus enticed and collected, where time is afforded, and the whole in any house and out-buildings are intended to be cleared away, they are suffered to regale on what they like best, which is ready prepared for them, and then to go away quietly for two or three nights; by which means those which are not allured the first night, are brought afterwards, either by their fellows, or the effects of the trailing, &c. and will not fail to come duly again, if they are not disturbed or molested. But many of the Rat-catchers make shorter work, and content themselves with what can be brought together in one night or two; but this is never effectual, except where the building is small and entire, and the Rats but few in number.

The means of taking them, when they are brought together, are various. Some entice them into a very large bag, the mouth of which is sufficiently capacious to cover nearly the whole floor of the place where they are collected; which is done by smearing some vessel, placed in the middle of the bag, with oil of rhodium, and laying in the bag baits of food. This bag, which before lay flat on the ground with the mouth spread open, is to be suddenly closed when the Rats are all in it. Others drive, or fright them, by slight noises or motions, into a bag of a long form, the mouth of which, after all the Rats are come in, is drawn up to the opening of the place by which they entered, all other ways of retreat being secured. Others again, intoxicate or poison them, by mixing with the repast prepared for them, the coccus Indicus, or the nux vomica. A receipt for this purpose has appeared, which directed four ounces of the coccus Indicus with twelve ounces of oatmeal, and two ounces of treacle or honey, made up into a moist paste with strong beer; but if the nux vomica be used, a much less proportion will serve than is here given of the coccus. Any similar compo-

sition of these drugs, with that kind of food the Rats are most fond of, and which has a strong flavour, to hide that of the drugs, will equally answer the end. If, indeed, the coccus Indicus be well powdered, and infused in the strong beer for some time, at least half the quantity here directed will serve as well as the quantity before-mentioned. When the Rats appear to be thoroughly intoxicated with the coccus, or sick with the nux vomica, they may be taken with the hand, and put into a bag or cage, the door of the place being first drawn to, lest those which have strength and sense remaining should escape.

By these methods, well conducted, a very considerable part of the Rats in any farm, or other house, and the contiguous buildings, may be taken.

#### The WATER-RAT.

This animal is about the same size with the latter, but has a larger head, a blunter nose, and smaller eyes. Its ears are very short, and almost hid in the fur, and the tip of its tail is whitish. The head and back are covered with long black hair, and that on the belly is of an iron grey. The length of this animal, from the nose to the tail is seven inches, and the tail is about five. This creature somewhat resembles the beaver, which induced Linnæus, in the first edition of his *Fauna Suecica*, to style it *Castor cauda lineari tereti*. It is very expert at swimming and diving; and was supposed by Ray and Linnæus to be web-footed; but this has been found to be a mistake, its toes pretty much resembling those of its kind. It inhabits Europe and North-America; but never frequents houses, being usually found on the banks of rivers, ditches, and ponds, where it burrows and breeds, and generally brings forth about six young at a time. It feeds on frogs, small fish, roots, and insects, and is itself the prey of the pike. On *maigre* days, this animal and the otter are eaten in France.

#### NATURAL HISTORY of the COMMON MOUSE.

THIS timid, cautious, active, little animal is entirely domestic, being never to be found in fields, or, as Mr. Buffon observes, in any countries uninhabited by mankind. Fearful by nature, but familiar from necessity, it attends upon mankind. Indeed all its motions appear to be regulated by fear and necessity: to seek provision is its only inducement to leave its hole, and it seldom ventures farther than a few paces from its home. It does not, like the rat, travel from one house to another, except it be compelled; and, as it requires less nourishment, it does less mischief.

Bold and courageous animals are more easily tamed than those which are cowardly and timid; the fearful being ever suspicious. The Mouse is the most feeble, and consequently the most timid of all quadrupeds, except the Guinea-pig; it cannot therefore be rendered thoroughly familiar. When fed in a cage, it retains its natural apprehensions; and to these it owes its security. No animal has more enemies than the Mouse, and few are so incapable of resistance. The cat, the snake, the hawk, the owl, the weasel, and the rat, destroy this race by millions, and were it not for their amazing fecundity they must long have been extirpated. The Mouse breeds at all seasons, and several times in the year, and usually produces six or seven young at a time, which in less than a fortnight are able to run abroad and shift for themselves. Aristotle gives us an idea of the astonishing fecundity of this animal, by assuring us, that having put a pregnant Mouse into a vessel of corn, he some time after found an hundred and twenty mice all sprung from one original. The early perfection of this animal implies the short duration of its life, which seldom exceeds two or three years.

This animal is too well known to require any further description. It inhabits all parts of the world, except the arctic. This species is often found of a pure white, in which state it makes a most beautiful appearance, the full bright eye appearing to great advantage amidst the snowy colour of the fur. The root of white hellebore



and staves-acre, powdered and mixed with meal, will infallibly poison them.

#### The LONG-TAILED FIELD MOUSE.

The length of this animal, from the nose to the tail, is about four inches and an half, and the tail four inches; the eyes are black, large, and full; the ears prominent; the head, back, and sides, of a yellowish brown, mixed with some dusky hairs: the breast is of an ochre colour, and the belly white: the tail is slightly covered with short hair. These animals are found only in fields and gardens, where they feed on ants, acorns, and corn; and in some parts of England they are called Bean-mice, from the havoc they make among the beans when first sown. They form great magazines in their burrows for winter provisions; but it generally happens that they provide for other animals. The hog in particular, comes in for a share, and the damage sustained by the farmer in the fields, by their rooting up the ground, is principally occasioned by their search after the hoards of the field mice. The nest that they provide for their young, is generally very near the surface, and frequently in a thick tuft of grass. They usually produce from seven to ten at a time.

#### The SHORT-TAILED FIELD MOUSE.

This animal, as its name implies, has a much shorter tail than the former, not exceeding an inch and an half, and ending in a small tuft. The length of this species, from the nose to the tail, is about six inches. Its colour is inclining to that of the domestic Mouse; the upper part being blackish, and the belly of a deep ash colour. This animal makes its nest in moist meadows, produces from six to eight at a time, and has a strong affection for its young. In its manner this creature resembles the last species: like that it resides under ground, and lives on nuts, acorns, and corn; and, like that, it forms a magazine of provision against winter. But, in the place of its abode, it differs from the former; being seldom known to infest gardens.

#### The HARVEST MOUSE.

The eyes of this animal are less prominent than those of the former, the upper part of the body is of an iron colour, the lower part white, a straight line along the sides dividing the colours: the tail is a little hairy. The length of the body from the nose to the tail, is two inches and an half, and the length of the tail about two inches. These animals are found in great plenty in Hampshire during the time of harvest; but they never enter houses. Many of them are carried into the ricks of corn in the sheaves, and on breaking up the ricks, some hundreds of them are sometimes killed. In winter they shelter themselves under ground, where they burrow very deep, and form a comfortable bed of dead grass. The nests for their young are made above ground, between the straws of standing corn. They bring forth about eight young at a time.

#### The ORIENTAL MOUSE.

This animal is chiefly of a grey colour, and the back and sides are elegantly marked with twelve rows of small pearl-coloured spots, extending from the head to the rump. The size of this animal is about half that of the common Mouse, and the tail about the length of the body. It inhabits India, where there is another small species which smells of musk, called cherofo, by the Portuguese who live there.

#### The GREGARIOUS MOUSE.

It has a blunt nose, a small mouth, and naked ears appearing above the fur. The hair on the upper part of the body is black; the throat, belly, and feet, whitish; the tail, which is about a third part of the length of the body, is thinly covered with white hair; the end black and ash-colour. This animal is somewhat larger than the common Mouse. It is found in Germany and Sweden; it eats sitting up, like a squirrel; burrows, and lives under ground.

#### The SHREW MOUSE.

The Shrew Mouse is about the size of the domestic Mouse, but differing greatly from it in the form of its nose, which is very long and slender. The teeth are twenty-eight in number, and of so singular a form, as to engage the attention of most naturalists. Gesner supposes that nature, in this animal, seems to have formed teeth of a mixed shape, between those of mice and serpents. The two upper fore-teeth are extremely sharp, with a kind of wing or beard on each side of them, resembling that of an arrow, which is scarce visible but on a close inspection. The other teeth are very small, and placed so close together as hardly to appear separated. The length of this little animal, from the nose to the tail, is about two inches and an half; and the length of the tail about one inch and an half: the ears are short and rounded; the eyes are extremely small, and, like those of the mole, almost concealed in the hair. The colour of the head and back is of a brownish dusky red, and the belly of a dirty white: the tail is covered with short dusky hair; the legs are very short, and the feet are divided into five distinct toes.

The Shrew Mouse inhabits Europe, lives in old walls, holes in the earth, or among heaps of stones; it is frequently found in or near out buildings, hay-ricks, and dung-hills: it lives on corn, insects, and filth of any kind. Either from its food or its nature, it has a strong disagreeable smell; so that the cat, when it is killed, will refuse to eat it. It is said to produce four or five young at a time. It is a very harmless little creature, doing scarce any injury, as it feeds more upon insects than corn, and may be considered rather as a friend than an enemy to mankind.

#### The WATER SHREW MOUSE.

It has a long slender nose, minute ears, and very small eyes almost hid in the fur: the colour of the head and the upper part of the body is black; the throat, breast, and belly, of a light ash-colour. It has a triangular dusky spot beneath the tail. This animal is much larger than the former, the body being three inches and three quarters long, and the tail two inches. It burrows in the banks near the water. Though formerly well known in England, it was lost till May 1768, when it was discovered in the fens near Revesly Abbey, in Lincolnshire. It is called the Blind Mouse by the farmers, and is at present rarely to be met with.

#### The MINUTE SHREW MOUSE.

Linnæus says this animal is the least of all quadrupeds. It has small eyes, a very slender nose, broad, short naked ears, and whiskers reaching to the eyes. Its hair, which is very fine and glossy, is grey above, and white beneath. Its head is almost as large as its body, and it has no tail. It inhabits Siberia, lives in some moist place beneath the roots of trees, and feeds principally on seeds. It burrows, runs swiftly, and has a voice resembling that of a bat.

There is another species, called the Murine Shrew Mouse, which inhabits Java, and has a long nose, round naked ears, and long hairs about the whiskers. It is nearly of the size of a common Mouse, and its body is of an ash-colour.

The Brazilian Shrew Mouse has a sharp nose and teeth: the body is of a dusky colour, marked along the back with three broad black strokes. Its body is about five inches long, and its tail two. It inhabits Brasil, and is not afraid of the cat, nor does the cat hunt after this animal, or consider it as its prey.

The Mexican Shrew Mouse, which Mr. Buffon calls le tucan, has a sharp nose, small round ears, two long fore-teeth above and below, and is without fight. Its body is thick, fat, and fleshy, and its legs so short that its belly almost touches the ground. It has long crooked claws, tawny hair, and a short tail: the length of its body is about nine inches. It inhabits Mexico, where it burrows and makes such a number of holes, that travellers cannot tread with safety. If it gets out of its hole, it does not know its way back again, but immediately



mediately digs another. It grows very fat, and is good for food. It feeds on roots and seeds.

#### NATURAL HISTORY of the MOLE.

**T**HE Mole is formed to live wholly under the earth, as if nature meant that no place should be left entirely untenanted. From our own sensations, we should naturally imagine, that the life of a quadruped, condemned to hunt under ground for its prey, and whenever it removed from one place to another, obliged to force its way through a resisting body, must be the most frightful and solitary in nature; but notwithstanding all these seeming inconveniencies, we discover no signs of distress or wretchedness in this animal. No quadruped appears fatter, none has a more sleek or glossy skin. Though it is indeed denied many advantages that most other animals enjoy, it is more abundantly possessed of others, which they possess in an inferior degree.

The divine wisdom is more agreeably illustrated in many animals; but the uniformity of its attention to every article of the creation, even the most insignificant, by adapting the parts to its destined course of life, appears more evident in the Mole than in any other animal.

The Mole is of a size between the rat and the mouse, but does not resemble either, being an animal of a very singular kind, and very different from any other quadruped. It is cloathed with fine short glossy black hair. Its nose is long and pointed like that of a hog, but much longer in proportion. Instead of external ears, it has only holes, and its eyes are so very small that it is extremely difficult to discover them. The ancients and some of the moderns were of opinion, that this animal was totally blind; but Dr. Derham discovered with a microscope, all the parts of the eye that are known in other animals; such as the pupil, the vitreous and the chrySTALLINE humours. The smallness of the eyes is a peculiar happiness to this animal; a small degree of vision being sufficient for a creature that is ever destined to a subterraneous abode. Had these organs been larger, they would have been continually liable to injuries, by the earth falling into them: nature has therefore made them very small, and, as a farther defence from that inconvenience, has covered them with fur. Anatomists mention another wonderful contrivance that contributes to their security, assuring us that they are furnished with a certain muscle, by which they can draw back or exert the eye, whenever it is necessary or in danger.

To compensate for the dimness of its sight, the Mole enjoys two other senses in the highest perfection; those of hearing and smelling: the first gives it the most early notice of the approach of danger; the other, in the midst of darkness, directs it to find its food. The nose also, being long and slender, is well adapted for thrusting into small holes, in search of worms and other insects that inhabit them. The wants of a subterraneous animal can be but few, and these are sufficient to supply them. The Mole has no appetites but what it can easily indulge, no enemy but what it can easily evade or conquer. When it has buried itself in the earth, it seldom stirs out unless compelled by violent rains, or when in pursuit of its prey, it comes too near the surface, and gets into the open air, which may be considered as its unnatural element. It usually chooses the softer grounds, as it can travel through them with less labour, and as the greatest number of worms and insects, on which it preys, are to be found there.

The breadth, strength, and shortness, of the fore-feet, which are inclined sideways in this animal, answer the use as well as form of hands, to scoop out the earth, to form its habitation, or to pursue its prey. Longer legs would have prevented the quick repetition of its strokes in working; and the oblique position of the fore-feet, throws all the loose soil behind the animal. The form of its body is also admirably contrived for its way of life: the fore part is thick and very muscular, giving great strength to the action of the fore-feet; and the

hinder-parts, which are small and taper, enable it to pass with great facility through the earth.

This animal has six cutting-teeth in the upper, and eight in the lower-jaw, with two canine in each. It has so tough a skin that it is difficult to cut through it: the fur is short, close set, and softer than the finest velvet. Tho' usually black, it is sometimes found spotted, and sometimes quite white. This animal is about five inches and three quarters long, and the tail one inch.

As these creatures seldom appear above ground, they have not many enemies, and readily evade the pursuit of those animals that are stronger and swifter than themselves. Inundation is the most fatal to them, and whenever such a calamity happens, numbers of them are seen attempting to save themselves by swimming, and using every effort to reach the higher grounds. In these cases the greatest part of them perish, together with their young which remain in the holes behind. If these accidents did not sometimes happen, they would, from their great fecundity, become extremely troublesome and injurious: as it is, indeed, they are considered by the farmer, in some places, as his greatest pest.

The Mole breeds in the spring, and brings forth four or five young at a time. Its nest is made of moss under the largest hillocks, a little above the surface of the ground; and, among the other Mole-hills, it is easy to distinguish that in which the female has brought forth her young. In order to form this retreat, the female begins by making a spacious apartment, which, at proper distances, is supported within by partitions to prevent the roof from falling. Round this she beats the earth very firm, in order to keep out the rain: the hillock in which this apartment is made, being raised above ground, the apartment itself is consequently above the level of the plain, and therefore less subject to slight inundations. The habitation being finished, she makes a nest for her young, of moss and dry leaves, where they lie secure from wet and danger.

The Mole does great damage in gardens and meadows, by throwing up the soil, and loosening the roots of plants: it is most active before rain, and in winter before a thaw, the worm being then in motion; but in dry weather this animal seldom forms any hillocks, as it then penetrates deeper after its prey, which at such seasons retires far into the ground. The Mole shews great dexterity in skinning a worm, which it always does before it eats it, ingeniously stripping off the skin from one end to the other. As the skin of this animal is extremely soft and beautiful, it is remarkable that it has not been turned to advantage. Agricola informs us, that he saw hats made from it, which were the finest and most beautiful that could be imagined. It is remarkable, though we are assured it is strictly true, that these animals are not to be found in Ireland.

The common method of destroying Moles, says the author of the Farmer's Dictionary, is by traps, made in the following manner.

Take a board about three inches and a half broad, and five inches long: on one side thereof raise two small round hoops or arches, one at each end, like the two hoops or bails of a carrier's waggon, capacious enough for a Mole to creep through easily: in the middle of the board make a hole about the size of a goose-quill, and have in readiness to put into it a stick about two inches and a half long, fitted at one end to the hole, and a little forked at the other. Cut also a hazel or other stick, about a yard, or a yard and an half long, which will rise with pretty strong elasticity, when it is stuck into the ground; and to the end of this stick fasten a very strong noose of horse-hair, made so as to slip easily. Have likewise in readiness four small hooked sticks: then go to the furrow or passage of the Mole, and after you have opened it, fit in the little board with the bended hoops downward, so that when the Mole passes that way, it may go directly through the two semi-circular hoops. But before you fix the board in this manner, put the hair-string through the hole in the middle of it; place the noose in a circular form, so as to make it answer to the two hoops; put the small stick before-mentioned gently into the hole in the middle of the board, so as



just to stop the knot of the hair string, without entering so far as absolutely to tighten it. Then fasten the board down with four hooked sticks, and cover it with earth. When the mole, passing in its furrow, comes into this trap, it will displace the small stick that hangs perpendicularly downward, the knot will then be drawn through the hole, and the noose instantly straitened by the riling of the end of the hazel stick to which it is fastened, which will catch the Mole round the neck.

Others, watching their motions in the morning and evening, which are their usual times of stirring, dig them out in a moment with a spaddle: and, about March, which is their time of breeding, numbers of their young ones may be destroyed by turning up their nests, which are generally in the largest hills; and the old ones who come to seek their young, will presently be taken.

Some approve of the pot-trap, which is a deep earthen vessel set in the ground with the brim even with the bottom of the Mole tracks. The season for using this is when the Moles couple, which is about the beginning of March, or perhaps somewhat earlier.

Mr. Worlidge says, they may be driven from the gardens, meadows, and other places, where a person would not choose to dig, by fuming their holes with brimstone, garlick, or other unfavoury things: and that the putting a dead Mole into a common haunt, will make them absolutely forsake it: to which Mr. Mortimer adds, but only upon report, that white hellebore and the roots of palma christi, dried, powdered, and sifted through a fine sieve, then mixed with barley-meal and eggs, and worked into a paste with wine and milk, will kill them, if laid in little pellets under their hills.

The writers of the Memoirs of the Society of Agriculture at Angers, recommend hazel nuts boiled in an infusion of hellebore, as a sure method of destroying Moles. Two or three of these nuts are to be laid under each Mole-hill, and the creatures, by being fond of that fruit, will be poisoned by eating them.

The way to remove Mole-hills and ant-hills, which are not only disagreeable to the sight, but injurious to the pasture, and a great hindrance to the mowing of the grass, especially where they are numerous, is, particularly in regard to the latter, either to divide the turf which grows over them, into three parts, with a spade, or other instrument, then to pare it off each way, to dig out the middle or core of the hills, to spread this mould over the other ground, to leave the holes open all the winter, that the ants may be killed, or lay the turf down again in the spring, and to roll those spots after the re-instated turfs are settled, and their grass has taken fresh roots; or, which is a more expeditious method, to scoop them out at once, with what Mr. Bradley calls a scoloped Mole-hill plough.

When this plough is used, the point of the scoloped spade must be set to the bottom of the hill, by raising the plough-stilts, so that it may go into the ground; and when the hill is almost cut through, the point should be raised up again, by weighing a little on the stilts.

The hollow left by this plough will receive the rain as it falls, and this will drown the remaining ants.

After the Mole and ant-hills, and other inequalities have been thus taken off, the best way is to carry them to a corner of the field, there to break them well to pieces, and mix them with a considerable portion of lime, or other manure suited to the soil, which will effectually destroy every remains of the ants, and convert the whole to good manure, which may then be profitably spread all over the surface of the ground. The spots on which the Mole or ant-hills stood, should be loosened with a spade, and then mixed with lime or other manure, and afterwards be laid down with clean grass-seeds.

#### The SIBERIAN MOLE.

It has a very short nose, no ears, and three toes on the fore-feet, with a very large claw on the outer toe. It has four toes on the hinder-feet, its body is of an equal thickness, and its rump quite round. It is of a beautiful green and gold colour, variable with the light. It has no tail, and is a native of Siberia. Mr. Buffon calls it *La Taupe dorée*, or the Golden Mole.

#### The RADIATED MOLE.

This animal has small fore-legs, with five long white claws on each: the nose is long, and the edges are beset with radiated tendrils. The hair on the body is very short and fine, and of a dusky colour. The hind-legs are scaly, and it has five toes on each foot. The length of this animal, from the nose to the tail, is about three inches and three quarters, and the tail, which is slender and taper, is about an inch and a quarter long. It inhabits North-America, and feeds on roots.

There is another animal found in North-America, called the long-tailed mole, with broadish fore-feet, and scales on the hind-feet, having a few short hairs on them: the claws on the fore-feet resemble those of the common Mole; those on the hind-feet are very long and slender. The fur on the body is soft, long, and of a rusty brown. The tail is two inches long, and covered with short hair. The length of the body is about four inches and an half.

#### The BROWN MOLE.

This animal has a slender nose, the upper-jaw longer than the under, with two cutting-teeth in the former, and four in the latter, the two middle of which are very small. It has no canine teeth. The fore-feet are broad, and the nails long; the hind-feet are small, with five claws on each. The hair is soft, glossy, and brown at the ends, though grey at the bottom. The feet and tail are white. The length of this animal, from the nose to the tail, is about five inches and an half; the tail is very slender, and about three quarters of an inch long. It is found in North-America.

There is another species found in America, called the Red Mole: it is of a pale reddish colour, has three toes on the fore-feet, and one on the hind. It resembles the European kind in the form of the body and tail.

## C H A P. XIII.

*Containing the NATURAL HISTORY of the HEDGE-HOG, the SLOTH, the ARMADILLO, the MANIS, the PANGOLIN, the ANT-EATER, the MORSE, the SEAL, the SEA-LION, the MANATI, the SEA-APE, and the BELUGA.*

#### NATURAL HISTORY of the HEDGE-HOG.

**T**HOUGH the Hedge-Hog has a most formidable appearance, it is one of the most harmless animals in the universe. Incapable or unwilling to offend, all its precautions are only directed to its own

security. It is armed with a thousand points, not to invade, but to defend it from the enemy. Other creatures may rely upon their force, their cunning, or their swiftness; but, destitute of all these, this animal has but one expedient for safety, from which alone it often finds protection. Whenever it is attacked, it withdraws all its



its-vulnerable parts, rolls itself into the form of a ball, and presents nothing but its defensive thorns to the enemy.

The head, back, and sides of this animal are covered with long sharp spines or prickles; the nose, breast, and belly, are cloathed with a fine soft hair; the legs are short, almost naked, and of a dusky colour: the ears are broad, round, and naked; the eyes are small, and placed high in the head; the mouth also is small, but well furnished with teeth; serving, however, only to chew its food, but of little use in attacking other animals, or defending itself against them. The toes on each foot are five in number, long and separated: the prickles which are about an inch in length, are very sharp-pointed; their points are white, the middle black, and the lower part white. The tail is little more than an inch long, and so concealed by the spines as hardly to be visible. The length of this animal, from the nose to the tail, is about ten inches.

When rolled up in a lump, the Hedge-Hog patiently waits till its enemy passes by, or is fatigued with fruitless attempts to annoy it. The cat, the weasel, the ferret, and the martin, soon decline the combat; and even the dog generally makes his attacks in vain. Increase of danger does but increase the animal's precautions to keep on its guard. In attempting to bite, the assailant more frequently receives than inflicts a wound. The enraged dog may bark, and roll the animal along with its paws; but the Hedge-Hog submits patiently to every indignity in order to remain secure. At length the dog, after expressing his chagrin by barking, leaves the inoffensive animal where he found it; who perceiving itself out of danger, ventures to peep out from its ball, and if not interrupted, makes the best of its way to its retreat.

Like most of the wild animals, the Hedge-Hog sleeps by day, and is in motion during the night. It feeds on roots, fruits, worms, and insects; and is erroneously charged with sucking cows, and hurting their udders. But the smallness of its mouth is sufficient to exculpate it from this reproach. It usually resides in small thickets, in hedges, and at the bottom of ditches covered with bushes, where it makes a hole of about six or eight inches deep, and lies well wrapped up in moss, grass, or leaves; and, during winter, rolls itself up and sleeps out that dreary season.

This animal is said to be very hurtful in gardens and orchards, but this conjecture appears to be ill-founded. Mr. Buffon, who kept these animals tame about his house, acquits them of the reproach of being mischievous in the garden. "I permitted several of them," says he, "to go about my garden; they did very little damage, and it was scarce perceivable that they were there: they lived upon the fruits that fall from the trees; they dug the earth into shallow holes; they eat caterpillars, beetles, and worms; they were also very fond of flesh, which they devoured boiled or raw." In short, the Hedge-Hog appears to be a very serviceable animal in ridding our fields of worms and insects, which are so injurious to vegetation.

The barbarity of anatomists furnishes us with an amazing instance of the patience of this animal; they dissected one alive, whose feet they first nailed down to the table; and it endured that, and every stroke of the operator's knife, without a single groan. These animals bring forth about the beginning of summer.

#### The TENDRAC; or, ASIATIC HEDGE-HOG.

Like the common Hedge-Hog, this animal is covered with prickles, though mixed in a greater proportion with hair; but they do not defend themselves like that animal, by rolling up into a ball. It has a long slender nose, short round ears, and short legs. The face, throat, belly, buttocks, and legs are thinly covered with whitish fine hair. The tail is very short and covered with spines. It is about the size of a mole. It inhabits the isles of India, and that of Madagascar.

There is another which Mr. Buffon calls the Tanrec, which is rather larger. It is covered with spines only on the top and hind part of the head, the top and sides

of the neck, and the shoulders: the rest of the body is covered with yellow bristles, intermixed with a few black, which are longer than the others.

Each of these animals is a variety of the same species, having five toes on each foot. They inhabit the isles of India, and Madagascar. They grunt like hogs, grow extremely fat, and multiply greatly: they frequent shallow water, whether fresh or salt: they burrow on land; and lie torpid six months in the year, during which time their old hair falls off. Their flesh, though very indifferent, is eaten by the Indians, and thought by them a delicacy.

#### The GUIANA HEDGE-HOG.

This animal has no external ears, but has two orifices which answer the purpose of ears. The head is short and thick; the back and sides are covered with short spines of an ash-colour tinged with yellow. The face, belly, legs, and tail, are covered with soft whitish hair. The length of this animal is about eight inches. It has a short tail, and long crooked claws. It inhabits Guiana.

#### NATURAL HISTORY of the SLOTH.

THERE are two different kinds of the Sloth, distinguished from each other by their claws; the one having only two claws upon each foot, and being without a tail; the other having a tail, and three claws upon each foot. The former in its native country is called the Unan, and the latter the Ai. The snout of the Unan is longer than that of the Ai, the ears are more apparent, and the fur is different. In the number of ribs also they differ greatly; the Unan having forty-six, and the Ai but twenty-eight. But notwithstanding these differences are so very observable, they have been but little regarded in the description of two animals which bear so strong a resemblance to each other in the general out-lines of their figure, in their appetites, their nature, and their helpless formation.

These animals are both described under the common appellation of the Sloth, and their habits are sufficient to excite our astonishment and curiosity. We shall take our description from the Ai, which differs from the other only in the trifling particulars abovementioned, and in being somewhat more active. It is about the size of a badger, its fur is coarse and irregular, and in some degree resembles dried grass: the tail is so short as to be little more than a stump; the mouth extends from ear to ear. It has a blunt black nose, very small external ears, and small heavy black eyes. Its legs are thick and awkwardly placed. The colour of the face and throat is a dirty white; the body and limbs are covered with hair of a lightish brown colour. The feet of this animal proceed from the body in such an oblique direction, that the sole of the foot seldom touches the ground. When it is therefore obliged to make a step forward, it scrapes on the back of the nails along the surface, and thus wheeling the limbs circularly about, it at length places its foot in a progressive position; the other three limbs are brought about with equal difficulty; and thus it travels at the rate of about three yards in an hour. The poor creature indeed seldom changes place but by constraint, and when strongly impelled by hunger.

The Sloth inhabits many parts of the eastern side of South America. It is the meanest, the most sluggish, and the most ill formed of all animals. It lives entirely upon vegetable food, particularly on the leaves and fruit of trees, and it often feeds even upon the bark, when nothing remains on the tree for its subsistence. It is a ruminant animal, and, like all those of the kind, has four stomachs, which consequently require a large share of provision to supply them, and in less than a fortnight it generally strips a large tree of all its verdure. While any thing remains that will supply its hunger, it keeps aloft, unwilling to descend. But when totally destitute of provisions above, it slowly crawls from branch to branch, in search of something to appease its appetite,



appetite, and at last is obliged to encounter the dangers that attend it below.

It is with the utmost pain and difficulty that this animal ascends a tree, but it is utterly unable to descend in the same manner; it therefore forms itself into a ball and drops from the branches to the ground; and as it is incapable of exerting itself to break the violence of its descent, it drops like a heavy shapeless mass, and, in the fall, feels no inconsiderable shock. There it remains for some time inactive, and then prepares for a journey to some neighbouring tree. This is the most tedious and painful journey that can be conceived: to travel to a tree at an hundred yards distance, is the indefatigable labour of a week. Its motions are almost imperceptible, and it frequently baits upon the road. At every effort to move, it sets forth a most plaintive and melancholy cry, which at once produces pity and disgust. This plaintive sound appears to be its chief defence, for every beast of prey is so affected by the noise as to quit it with horror. When it is arrived at its destined tree, it mounts it with greater ease than it moved upon the plain. It falls to with a most excellent appetite, and by greedily devouring the leaves and bark, destroys the very source that supplies it.

The look of this animal is so piteous as to excite compassion; and its cry is generally accompanied with tears which dissuade every creature from injuring so wretched a being. Its abstinence from food is so powerful, that one of them was known to remain forty days without meat or drink. The strength of its feet is so extraordinary, that whatever it seizes on cannot escape its claws. Kircher informs us that a Sloth seized a dog with its feet, and held him four days in that situation, till the poor animal perished with hunger.

Were we to measure the happiness of this animal by our own sensations, it is certain that nothing can be more miserable, but it may probably have some stores of comfort which we are strangers to, and which may place it upon a level with some other ranks of the creation. If it is sometimes fatigued with pain, distress and labour, it is compensated by a larger portion of plenty, indolence, and security. These animals are, however, very differently formed from all other quadrupeds, and doubtless have different enjoyments. Like birds they have but one common vent for the purposes of propagation and their natural discharges. Like the tortoise, which they resemble in the slowness of their motion, they live a considerable time after their nobler parts are wounded, or even taken away.

The Unan, or Sloth with two toes, inhabits South America, and the isle of Ceylon; though Mr. Buffon has fixed the residence of this genus only to America. Seba expressly says his specimen was brought from Ceylon; and Mr. Pennant assures us that he was informed by a man distinguished in the literary world, who had been long resident in India, that he had seen this animal brought from the Paliacat mountains that lie in sight of Madras. It is therefore evident that it is common to both continents.

Barbot and Bosman describe an animal by the name of Potto, that is met with in Guinea, which is at least a species of this genus, as they ascribe to it the attributes of the former; and these writers were too observant of the animals of Guinea to mistake one, whose characters are so strongly marked as those of the Sloth.

Insignificant as this animal is, who yet can help observing the special hand of a gracious Providence, in the formation and care of it? Not designed for motion, its feet are nevertheless furnished with claws, which enable it to hold fast in that station, which is necessary for it. Helpless as it is, and liable to a thousand mischances on the ground, the universal Provider hath assigned it a place of safety, where it finds plenty of food; and as changing its place, would be uneasy and dangerous, he hath made drinking unnecessary to it, from the nature of its food and its own constitution. To render it, defenceless as it is, the less obnoxious to pursuit, the colour, wherewith the Creator hath clothed it, serves to secure it even from view; and the amazing instinct wherewith it is endowed, and which we

have remarked, abundantly evinces a designing and directing hand.

#### NATURAL HISTORY of the ARMADILLO.

NATURE seems to have reserved all the wonders of her power for those remote and thinly inhabited countries, where the men are savage and the quadrupeds various; and becomes more extraordinary in proportion as she retires from human inspection. The truth is, that wherever mankind are polished or become populous, they shortly rid the earth of these half formed productions, which, in some degree, incumber the soil. In a cultivated country they soon disappear, and continue only in those remote deserts, where they have few enemies but such as they are able to oppose or avoid.

The Armadillo is covered like a tortoise with a shell, or rather a number of shells; therefore its other proportions are not easily discerned. At the first view, it seems a round misshapen mass, with a long head, and a shortish tail. It is of various sizes, from a foot to three feet in length, and covered with a shell elegantly and regularly divided into several pieces, which wrap over each other like those on the tail of a lobster. The difference in the size of this animal, and in the number or disposition of its plates or bands, have been considered by some naturalists as constituting so many species; but in all the animal is partially covered with this coat of mail. This shell, which perfectly resembles a bony substance, covers the head, neck, sides and rump, and the tail to the very point. The throat, breast, and belly, are covered with only a white soft skin; but even in the parts that are softest, the skin seems to have a tendency to ossify. The shell on the upper part of the body is composed of more pieces than one, which, as we have already observed, slide over each other as in the tail of a lobster, and are connected by a yellow membrane, like the folds on the tail of that animal. By this means the Armadillo has a motion in its back, and the armour yields to its necessary inflections. From the bands, which are of various numbers and sizes, these animals have been distinguished into various kinds. In general, however, the shoulders are covered with one large piece, and the rump with another. Between these, on the back, the bands are placed in different numbers, wrapping over each other, and giving play to the whole. They also open down along the back, as well as crossways, so that the animal can move in any kind of direction.

Some of these animals have only three of these bands between the large pieces, and are therefore called three-banded Armadillos: others have six, a third kind eight, a fourth nine, and a fifth twelve; which are all named from their number of bands. In the last, or sixth kind, there is but one large piece, which covers the shoulders, the rest of the body being entirely covered with bands down to the tail. In different kinds, these shells are differently coloured, but they are principally of a dirty grey.

These shells might be sufficient to defend this animal from a feeble enemy, but they could not shield it from a powerful antagonist. Nature has therefore furnished the Armadillo with a method of protecting itself like that of the hedge-hog. Whenever it perceives itself attacked, it draws its head under its shells, leaving no part of it to be seen but the tip of the nose: if the danger increases, the cautions of the animal increase in proportion; it then draws up its feet under its belly, and unites the two extremities, while the tail appears as a band to strengthen the connection: thus it forms itself into a kind of ball, though it is a little flattish on each side. It thus becomes invulnerable, and continues in this position as long as danger seems to threaten it, and sometimes for a considerable time afterwards. While it remains in this situation it is tossed about at the pleasure of every other quadruped, and has very little the appearance of a creature endowed with life and motion.

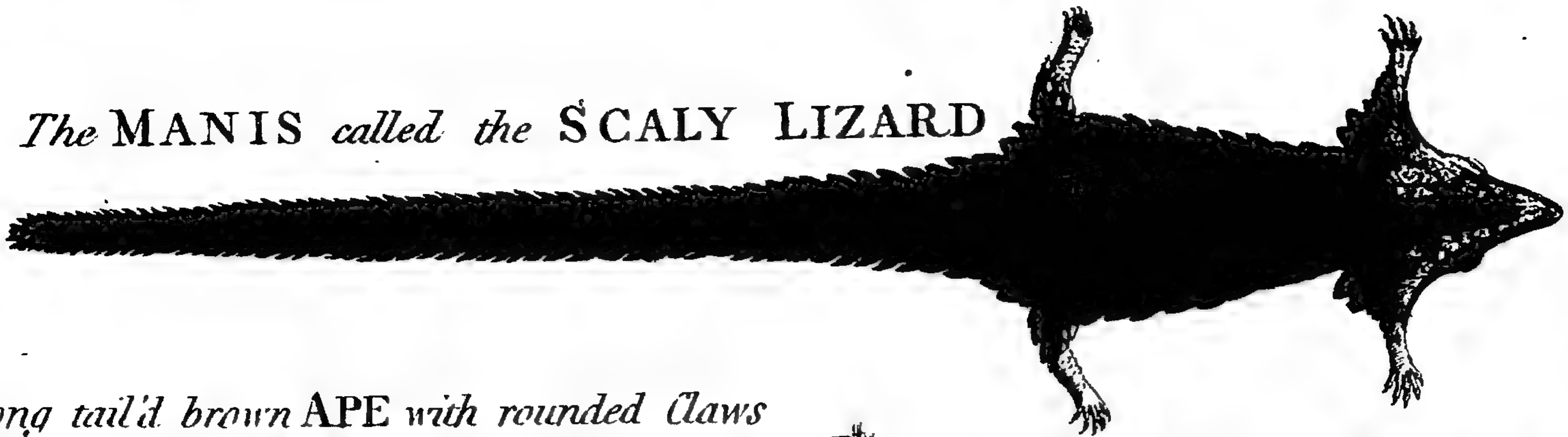




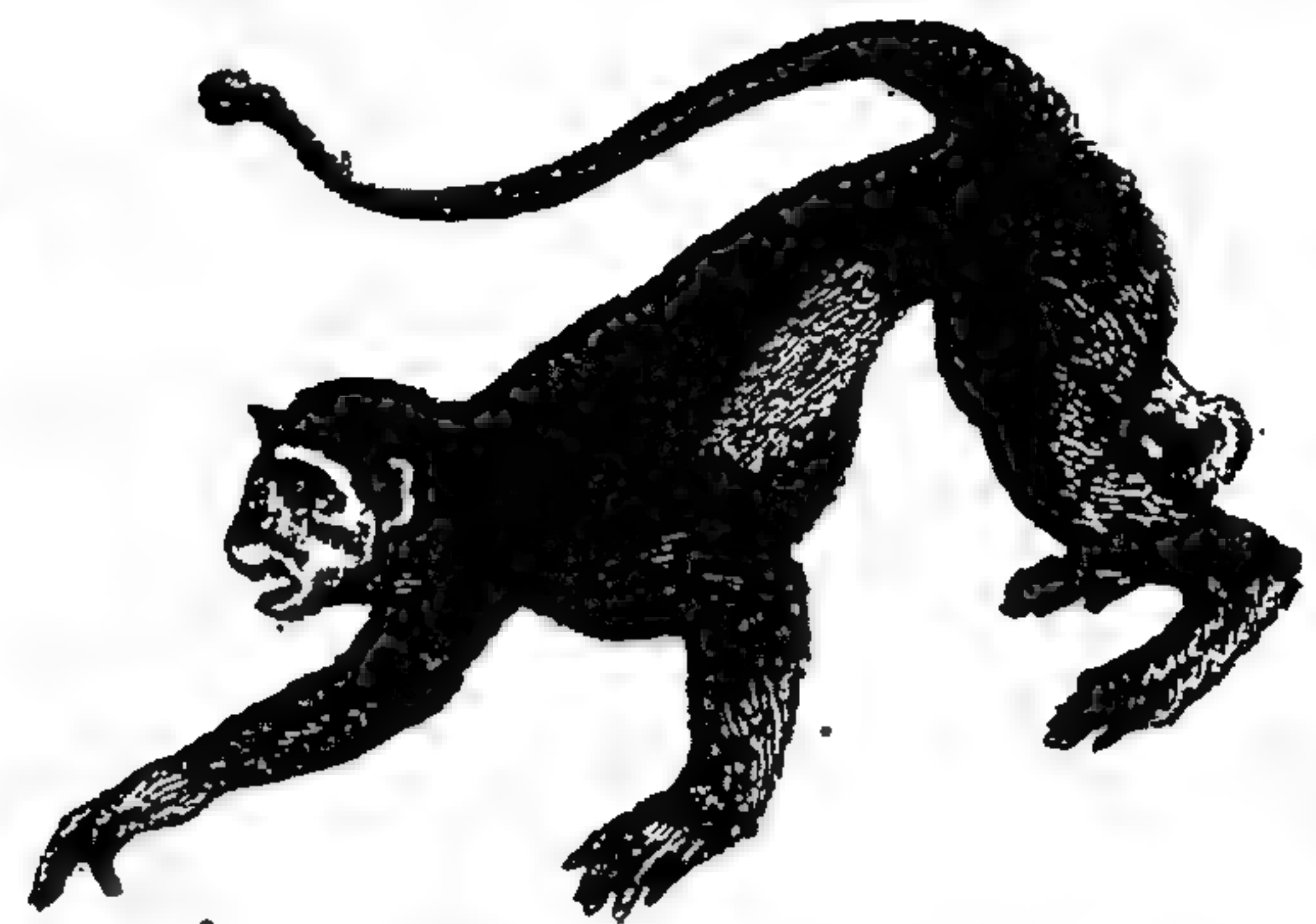


# QUADRUPEDS .

*The MANIS called the SCALY LIZARD*



*The long tail'd brown APE with rounded Claws*

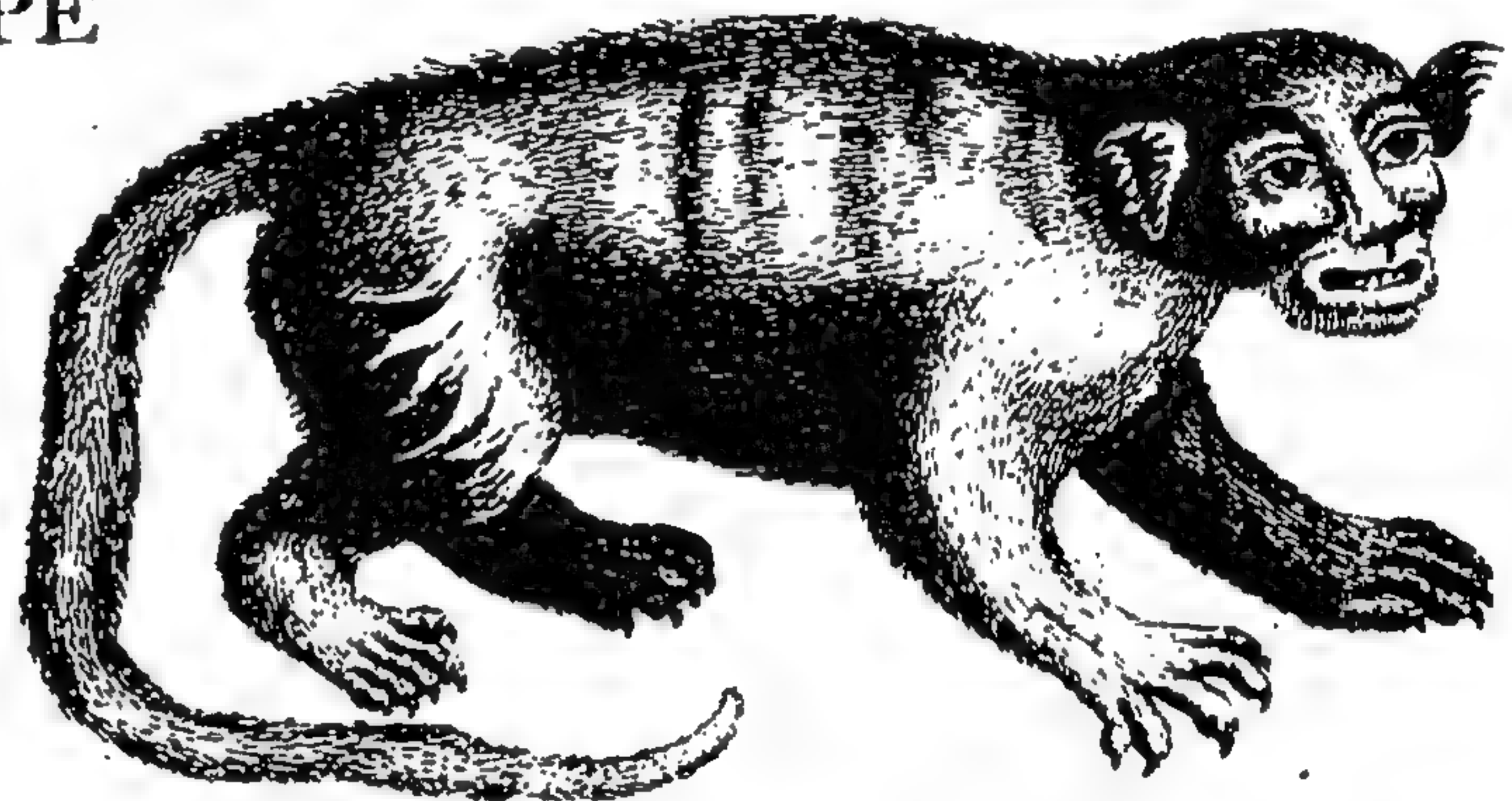


*The long leg'd APE with no Beard*

*The hairy Ear'd APE*



*The CAGUI*



*The hairy headed SIMIA*



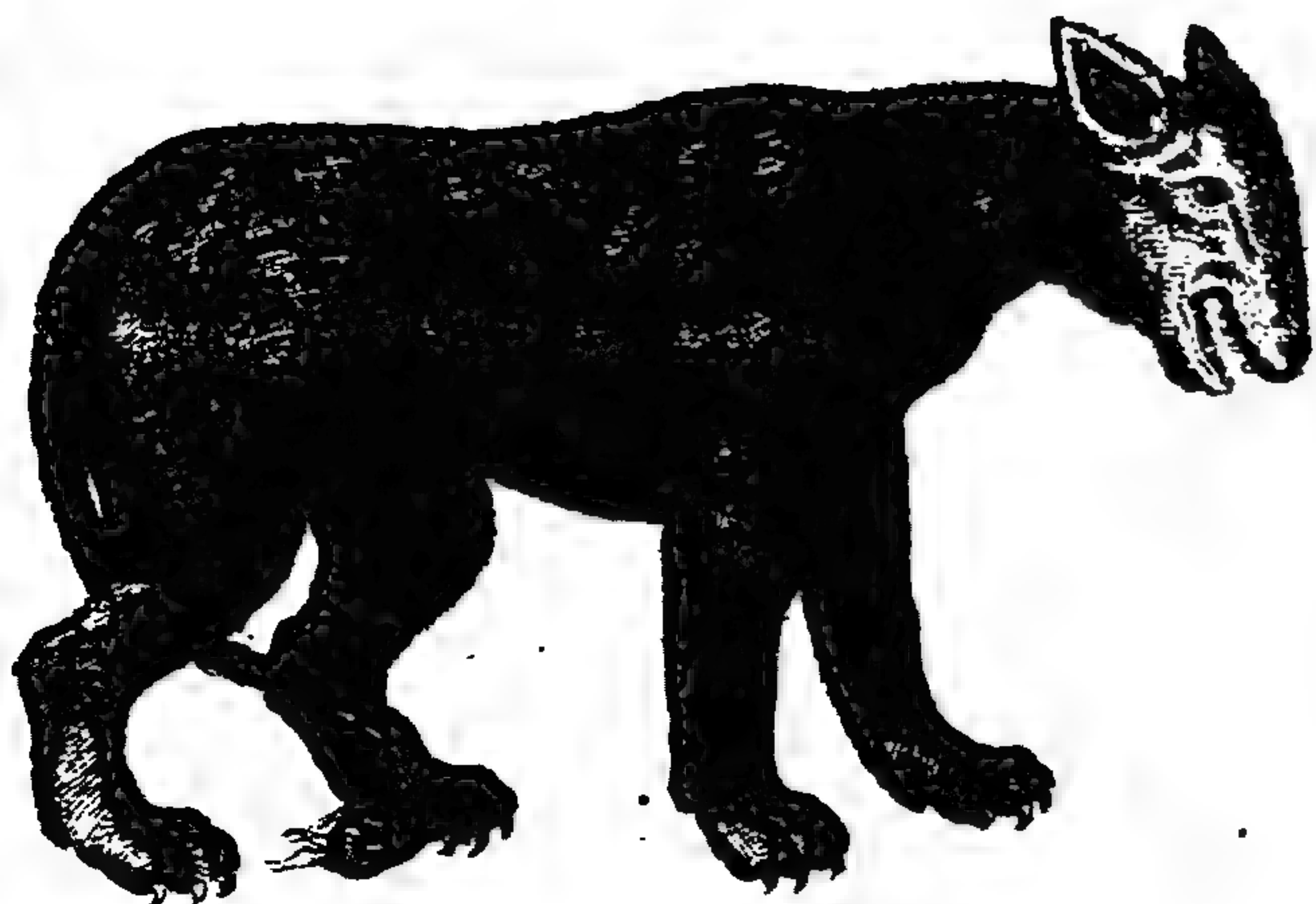
**STAG**



**CAMELO PARDALIS**



**ELK**



**TYGER**



**CAMEL**



*African ANTILOPE*

*Remboldson sculp.*



The Indians take this animal by the tail, when it immediately sticks its claws in the earth so strongly, that there is no moving it till the Indian tickles it with a stick. They have another method, when they find the Armadillo in this position; that is, to lay it before the fire, which soon obliges the poor animal to unfold itself, and to face a milder death, to escape one that is more savage. This animal is also hunted with little dogs, which, by their barking, give notice to their master of its haunts, who digs it out of its burrow. It is, however, extremely dangerous to take it out incautiously, on account of the snakes that usually lurk in the burrows.

This animal inhabits South America; the smaller species live in moist places, the larger in dry, and at a distance from the sea: it burrows under ground, keeps its hole in the day, and rambles out at night. It feeds on potatoes, melons, and roots, and does infinite damage to plantations. It drinks great quantities, grows very fat, and when young, is reckoned delicious eating: but, when old, it has a disagreeable musky taste. These animals breed every month, and produce four at a time. This animal is a native only of America, for before the discovery of that continent, they were utterly unknown. It is an inoffensive creature, unless it finds its way into a garden or plantation. Though natives of the warmest parts of America, they bear the rigour of our climate without any inconvenience. Their motion is a kind of swift walk, but they can neither run, leap, or climb trees; so that they have no other method of escaping from their pursuers, than by making towards their hole as expeditiously as they can: or, if this should happen to be impracticable, to make a new hole before the arrival of the enemy. For this purpose they require but few moments, for in this business even the mole itself cannot be more expert, being furnished with claws extremely large, strong, and crooked, and generally four upon each foot.

The Armadillo is sometimes caught by the tail as it is making its way into the earth, but, in these cases, it usually leaves the tail in the hand of the pursuer, being satisfied to preserve its life with the loss of it. The hunters, sensible of this, never pull the tail with all their force, but hold it while another digs the ground about it, by which means the animal is taken alive. If the Armadillo be near a precipice, it frequently escapes by rolling itself up, and then tumbling down from rock to rock, without the least hurt or inconvenience.

Some naturalists are of opinion, that there is a kind of friendship between the Armadillo and the rattlesnake. It is certain indeed that they live peaceably and commodiously together, and are often found in the same hole; but it is probably a friendship of necessity to the Armadillo: the rattlesnake takes possession of its retreats, which neither of them are disposed to quit, each being incapable of injuring the other.

It has already been observed that all these animals resemble each other in the general character of being cloathed with a shell, yet they differ greatly in their size, and in the parts into which their shell is divided. The first of this kind has but three bands between the two large pieces that cover the back, and is called the tatu apara. In this the tail is shorter than in any other kind, and does not exceed two inches in length, though the whole shell, including its several parts, is a foot long and eight inches broad. The second, which is called by Mr. Buffon the encoubert, is distinguished from the rest by six bands across the back. It has a small head and a very long tail, and is about the size of a sucking pig. The third, which is the tatulette of Mr. Buffon, is considerably smaller than the former, and is furnished with eight bands. The fourth is the pig-headed, or American Armadillo, having nine bands: this is larger than either of the former, being about two feet long from the nose to the tail. The fifth is the kabbassou, which is the largest of the kind, and is furnished with twelve bands: some of these measure upwards of three feet in length; but they are never eaten as the others are. The sixth is called the weasel-headed Armadillo, by Mr. Grew in his Rarities, and has eigh-

teen bands, with a large piece before, and nothing but bands backwards. The body of this animal is about thirteen inches long, and the tail five inches. Those which have the fewest number of bands, present great interstices between them when rolled up, and are more easily vulnerable. The largest kinds have the most solid shells, but their flesh is harder, and not so delicious as that of the smaller. It is indeed generally thought unfit for the table.

#### NATURAL HISTORY of the MANIS, or PHATAGIN.

THE back, sides, and upper part of the tail of this animal are covered with large strong scales. It has a small mouth, a long tongue, and no teeth. It has a slender nose and a smooth head: the body, legs, and tail are guarded by large sharp-pointed striated scales: the throat and belly are covered with hair. It has short legs, and four claws upon each foot, one of which is very small. The tail is a little taper, but blunt at the end. This animal is particularly distinguished by the length of its tail, which is considerably above twice the length of its body; the body not exceeding fifteen inches in length, and the tail at least three feet four inches. It is found in Africa, and the warm latitudes of the East. It approaches so near the genus of lizards, as to appear to be the link of the chain of beings which connects the proper quadrupeds with the reptile class. These animals not being very numerous, it is imagined their fecundity is not great.

#### NATURAL HISTORY of the PANGOLIN, or SHORT-TAILED MANIS.

OF all other animals, the Pangolin, which is a native of the torrid climates of the antient continent, is the best protected by nature from external injury. The length of the body is three feet, and the tail is about the same length. Like the lizard, it has a small head, a long nose, a thick neck, a long body, short legs, and a long tail. It has no teeth, but is armed with five toes on each foot. Its ears resemble human ears. But it is principally distinguished by its scaly covering, which defends the animal on all parts, except under the shoulders, the lower part of the head and neck, the breast, the belly, and the inner side of the legs; these parts being covered with a smooth soft skin. At all the interstices between the shells of this extraordinary creature, strong hair like bristles are seen, which are yellowish towards the roots, and brown at the extremity. The scales are of different sizes, and appear stuck upon the body somewhat like the leaves of an artichoke, the largest being always towards the tail. The substance of those scales resembles that of horn; they are convex on the outside, and concave in the inner.

When the Pangolin has acquired its full growth, it is said these scales will turn a musket-ball; it therefore fears nothing from the efforts of all other creatures except man. When danger approaches, it rolls itself up like the hedge-hog, presenting no part to the assailant but the cutting edges of its scales. The length of the tail, which might be thought easily separable, increases the security of the animal, by being wrapped round the rest of the body. The shells are so thick and pointed that they repel every animal of prey; serving as a coat of armour that wounds while it resists. The tiger, the leopard, the panther, and the hyæna, in vain attempt to force it; in vain do they tread upon it, and roll it about with their paws, the Pangolin is perfectly secure within, while its invaders suffer for their rashness. Man alone seems furnished with arms to compel it to surrender: the negroes, who consider the flesh of this animal as a very great delicacy, beat it to death with very large clubs.

But though so formidable in its appearance, there cannot be a more inoffensive animal than the Pangolin. If it had the disposition to injure larger animals, nature has rendered it incapable by denying it teeth: the bony matter



matter which supplies the teeth of other animals, is probably exhausted in this, in supplying the scales that go to the covering of its body; but as it lives entirely upon insects, nature has fitted it for that purpose in a very extraordinary manner. Having a long nose, it may be naturally supposed to have a long tongue; but to add to its length, it is doubled in the mouth, which enables the animal to extend it many inches beyond the tip of the nose. This tongue is round, very red, and covered with an unctuous liquor, which gives it a shining hue. As ants are the insects on which it chiefly feeds, when the Pangolin approaches an ant-hill, it lies down near it, concealing its retreat as much as possible; and, stretching out its long tongue among the ants, keeps it motionless for some time. These insects, allured by the slimy substance with which it is smeared, immediately flock to it in great numbers; and, when the Pangolin supposes it has got a sufficiency, it withdraws the tongue, and swallows legions at a time.

As all the force or cunning of this animal is exerted against these noxious insects, it is extraordinary that the negroes should be so eager to kill it; but savage natures pursue the immediate good, without being solicitous about the future consequences: they hunt this creature, therefore, with the utmost avidity, for its flesh. These animals chiefly inhabit the most obscure parts of the forest, and dig themselves a retreat in the clefts of rocks, where they bring forth their young, and are a solitary species, very rarely to be met with. They have no cry, nor make any other noise than a kind of snorting.

#### NATURAL HISTORY of the GREAT ANT-EATER.

**T**HIS animal is called the Ant-bear, by Ray. It has a long slender nose, small black eyes, and short round ears; the tongue is slender, thirty inches in length, and lies double in the mouth. The legs are slender, having four toes on the fore feet, and five on the hind: the two middle claws on the fore-feet are very large, strong, and hooked; the hair on the upper-part of the body is black, mixed with grey, and about six inches in length: a black line, bounded above with white, extends from the neck cross the shoulders to the sides. The tail is covered with coarse black hair about a foot long. The length of this animal, from the nose to the tail, is about three feet ten inches, and the tail two inches and a half.

This animal is a native of Brazil and Guiana. It lives chiefly in the woods, and conceals itself under the fallen leaves. It seldom ventures from its retreat, and when it does, the industry of an hour supplies it with food for several days. It feeds entirely upon ants and insects, which, in the countries where it is bred, are found in the greatest abundance, and often build themselves hills which are five or six feet high, where they live in a community. As soon as it discovers their nests, it overturns them or digs them up with its feet; then thrusts its long tongue into their retreats, and, penetrating all the passages of the nests, withdraws it into its mouth loaded with prey. Sometimes when it approaches an ant-hill, it creeps slowly forward on its belly, taking every precaution to keep itself concealed, till it comes within a convenient distance of the place where it intends to make its banquet; there lying closely at its length, it thrusts forth its tongue (which is round and red, and often near two feet long) across the path of those industrious insects, where it lies motionless for several minutes. The ants of that country, some of which are half an inch long, allured by its appearance, come forth and swarm upon it in great numbers, and wherever they touch they remain; for the tongue of this animal is covered with a slimy fluid, which, like bird-lime, entangles every creature that lights upon it: when this instrument has secured a sufficient number of ants, the animal immediately draws it in, and instantly devours them all: then, remaining in the same position, it practises the same arts till its hunger is appeased, and then retires to its lodging-place; where it continues till it is again excited by the calls of hunger.

Helpless as this animal appears to be, and though without teeth, it is fierce and dangerous; and, when driven to an extremity, will fight with its claws with great obstinacy; scarce any creature that gets within its fore-feet can disengage itself: even the panthers of America are often unequal in the combat; for if the Ant-Eater once obtains an opportunity of embracing them, it fixes its talons in their sides, and both fall together, and generally both perish; for such is the stupidity or vindictive desperation of this animal, that it will not extricate itself even from a dead adversary. The Ant-Eater sleeps in the day, and preys by night: its flesh has a disagreeable strong taste, but it is eaten by the Indians.

#### The LESSER ANT-EATER.

It has a long slender nose, bending a little downward, a little mouth, and small black eyes. Its ears are also small and upright: it has four claws on each of the fore-feet, and five on those behind: the hair is of a pale yellow colour, and hard and shining: a black line crosses the shoulders on each side of the neck, and meets at the lower end of the back. The length of the body of this animal is about nineteen inches, and the tail ten inches. It inhabits Brazil and Guiana, and its manners are much the same as the last. It climbs trees, and takes hold of the branches with its tail.

#### The LITTLE ANT-EATER.

This animal has a conic nose, bending a little downward; the ears are small and almost hid in the fur: the head, body, limbs, and the upper-part and sides of the tail, are clothed with long soft silky hair, or rather wool, of a yellowish brown colour. It has two hooked claws on the fore-feet, the exterior of which is considerably the largest: it has four claws on the hind feet. The length of the body of this animal is about seven inches and an half, and that of the tail eight inches and an half: the tail is thick at the base, and tapers to a point. It inhabits Guiana, and climbs trees in pursuit of a species of ants which build their nests among the branches. Like the former, it lays hold of the branches with its tail.

There is a fourth species found at the Cape of Good Hope and in Ceylon, having four toes on the fore-feet, and pendulous ears, which distinguish it from other kinds. Kolben describes their manners particularly, saying they are toothless, that if they fasten their claws in the ground, no man has strength sufficient to pull them away; and that they thrust out their clammy tongue into the ant's nest, and draw it into their mouth covered with insects. Mr. Strachan, in his account of Ceylon, describes an animal which the natives call the Talgoi, or Ant-Bear, in the same manner. It is therefore certain that these animals are common to the old and new continents.

By this animal we see the great provider takes care of the most singular of his productions; and those which appear to us most destitute of means to preserve themselves, are often the happiest of all. What an emblem is this voracious depredator of the generation of ants, of those indolent and gluttonous feasters, who live upon the destruction of a thousand inoffensive creatures! Nature leads him to this method, in order to support his being: but the human epicures destroy only to satiate the meanest and most filthy of animal appetites! It raises our indignation, when we behold the industrious ants a prey to such an animal; (whose utility we know not, other than that the fur is very fine and beautiful) but alas, when we reflect upon the human race, do we not see the industrious and laborious a continued prey to, and the great means of supporting the voluptuous and indolent! The king himself, says the wise man, is served by the field; and indebted to the unwearied toils of the meanest of the people! It cannot fail to affect an humane heart to consider the state of things, in this present imperfect scene; the miseries of the poor, and the hardships of far the greater part of mankind. While the view must lead every serious mind to an earnest desire for the speedy accomplishment of the divine purposes,



poses, and for the establishment of that happy holy kingdom, where sorrow, sin, and death, shall never be known.

#### NATURAL HISTORY of the MORSE, or WALRUS.

**T**HIS animal, which is somewhat of the seal kind, has a round head, a small mouth, and very thick lips, covered both above and below with pellucid bristles as thick as a straw. It has two small fiery eyes, and two little orifices instead of ears: the neck is short, and the body thick in the middle, tapering towards the tail. The skin is thick and wrinkled, having short brownish hairs thinly dispersed over it. Its legs which are short, have on each five toes, all connected together by webs, and having small nails on each of them: the hind-feet are very broad, and the hind legs are usually extended on a line with the body; the tail is very short. The length of this animal, from the nose to the tail, is from twelve to eighteen feet, and it generally measures ten or twelve feet round in the thickest part of the body. Their teeth are generally from two to three feet long, and the ivory is held in greater esteem than that of the elephant, being both whiter and harder. On the coast of the Icy Sea, where these animals are seldom molested, and consequently have time to attain their full growth, the teeth have been sometimes found of the weight of twenty pounds each.

These animals inhabit the coast of Spitzbergen, Nova Zembla, Hudson's-Bay, and the gulph of St. Laurence, and the Icy-Sea, as far as cape Tschuktschi. In some places they appear in herds of hundreds at a time: they are very shy animals, and avoid those places which are much frequented by mankind. They are extremely fierce, and, if wounded in the water, endeavour to sink the boat of their adversaries, either by rising under it, or by striking their large teeth into the sides: they roar very loud, and follow the boat as long as they can keep it in view. They are often seen in great numbers, sleeping on an island of ice; and, if they are disturbed, they plunge into the sea with great impetuosity. At these times it is dangerous to approach the ice, lest they should tumble into the boat, and overset it.

These animals never go upon land until the coast is clear of ice, and then they sometimes go ashore in amazing numbers. As soon as the first arrives upon dry land, it will never move till another comes and forces it forward, by beating it with its large teeth: this receives the same treatment from the next, and so in succession till they are all landed. On the Magdalene isles in the gulph of St. Laurence, the hunters watch the landing of these animals, and as soon as they find a sufficient number for what they call a cut, they go on shore, each armed with a spear, sharp on one side like a knife, with which they cut their throats. Particular care must be taken not to stand in the way of those which attempt to return to the sea, which they do with great agility by tumbling head-long; for their vast weight would crush any person to death. They are killed for their oil, one animal sometimes producing half a tun; and Mr. Buffon informs us, that he has seen braces for coaches made of their skins, which were both strong and elastic.

The Morse produces one or two young at a time; it feeds upon sea-herbs and fish: it will also eat shells, which it digs out of the sand with its teeth. They are said to ascend rocks or pieces of ice by the assistance of their teeth, fastening them to the cracks, and by that means drawing up their bodies. Except mankind, this animal appears to have no other enemy than the white bear, with which it often

combats, and is generally victorious, on account of its large teeth.

#### The INDIAN MORSE, or WALRUS.

This is the Dugon of Mr. Buffon, and has two short canine teeth or tusks, placed on the upper-jaw, pretty close to each other. It has four grinders on each side of the upper-jaw, placed at a distance from the tusks, and three on each side in the lower-jaw. It inhabits the Cape of Good-Hope, and the Philippine Isles. It is said to go on land to feed on the green moss.

#### NATURAL HISTORY of the SEAL.

**T**HE Seal resembles a quadruped in some respects, and a fish in others. The head is round, and the nose broad, somewhat resembling that of an otter. It has two canine teeth in each jaw, large whiskers, oblong nostrils, and large black sparkling eyes; the tongue is forked at the end: and it has six cutting teeth in the upper-jaw, and four in the lower. It has no external ears, but holes answering the purpose of ears: the neck is of a moderate length and well proportioned, and the body is the thickest where the neck is joined to it. From thence the animal tapers down to the tail, becoming gradually smaller all the way like a fish. The body is covered with a thick bristly shining hair, the colour of which is very various, being sometimes dusky, sometimes brindled, and sometimes spotted with white or yellow. In most of the above particulars it resembles the quadruped kind, but it greatly differs from all of them in the feet; for, though furnished with the same number of bones with other quadrupeds, yet they are stuck on the body in so remarkable a manner, and are so covered with a membrane, that they would more resemble fins than feet, did not the sharp strong claws, with which they are pointed, shew their proper analogy. The fore-feet, or rather hands, are covered in a thick hairy skin, which, like a fin, assists in swimming; these are distinguished by five long piercing claws. The hind feet are extended on each side of its short tail, covered also with a skin, and both almost joining together at the tail. The usual length of this animal is about five or six feet, though some have been found that have exceeded eight feet. In the formation of the tongue, the Seal differs from every other quadruped: it is forked or slit at the end like that of a serpent.

These animals inhabit almost every quarter of the globe, but they are found in great multitudes towards the north and the south. They swarm near the Arctic circle, and the lower-parts of South-America, in both oceans: they are found in the Caspian sea, in the lake Aral, and lake Baikal, which are fresh waters. In the last they are covered with silver hairs.

The water is the most usual habitation of the Seal, and its food is whatever fish it can catch. But though it can remain under water for several minutes, it cannot, like the fishy tribe, continue there for any considerable time; and a Seal may be drowned like any other terrestrial animal. Being awkwardly formed for going upon land, it seldom ventures at any great distance from the shore, but usually basks upon the rocks, and when disturbed plunges immediately to the bottom of the water. Its hind-feet being turned backwards, they are entirely useless upon land, and when the creature moves, it drags itself forward like a reptile, apparently with great pain and labour. For this purpose it uses its fore-feet, which, though exceedingly short, enable it to move with so much swiftness, that, for a short space, a man cannot easily overtake it;



ice; and it always runs towards the sea, from which it never is far distant.

In the north and icy seas these animals are particularly numerous. It is on those shores where there are few inhabitants, and where the fish resort in great abundance, that they are seen by thousands basking on the rocks, and suckling their young. Like other gregarious animals, they keep a centinel upon the watch, and, upon the least alarm, they plunge altogether into the water.

It is remarkable that these animals generally come on shore in storms and tempests: when every other creature takes refuge from the fury of the jarring elements, the Seals appear in thousands, sporting along the shore, and seem delighted with the general confusion. Perhaps the sea is then too turbulent for them to reside in; and they come upon land because they are unable to endure the shock of their more natural element.

Seals are animals of passage, and perhaps the only quadrupeds that migrate from one part of the world to another. Quadrupeds in general are contented with their native plains and forests, and seldom wander, except compelled by necessity or fear. But Seals change their habitations, and are seen in myriads directing their course from one continent to another. On the northern coasts of Greenland, they are observed to retire in July, and to return again in September, as it is supposed in pursuit of food: but in March they make a second voyage in order to cast their young, and return about the beginning of June, accompanied by their young, observing a certain time and track, like birds of passage. When they engage in this expedition, vast droves of them are seen making towards the north, taking that part of the sea which is clearest of ice, and sailing forward into those seas, where man cannot follow. They are very fat when they leave the coasts to go upon this expedition, but they are excessively lean at their return.

These animals produce two or three young at a time, which, for some short space, are white and woolly: they bring forth in autumn, and suckle their young in caverns, or in rocks, till they are six or seven weeks old, at which time they take the sea. The young are remarkably docile, and understand the voice of the mother among the numerous bleatings of the rest of the old ones; they are obedient to her call, and mutually assist each other in distress or danger. Thus early initiated to subjection, they continue to live in society, hunt and herd together, and have a variety of notes or cries, by which they encourage to pursue, or express to each other their apprehensions of danger. Their voices are said, at some times, to resemble the bleating of a flock of sheep, and at others, to imitate the shriller notes of the cat.

The chief of their food being fish, they are very expert at catching them. Where the herrings are found in shoals, the Seals are often seen, and they devour them by thousands: but, when the herring retires, the Seal is obliged to hunt after fish which are stronger, and more capable of evading the pursuit. In deep waters, however, they are extremely swift, and dive with great rapidity. The smaller and weaker fishes have no other means to escape their tyranny, than by darting into the shallows.

They are the tyrants of the element in which they chiefly reside, and are not destitute of courage even upon land, except on those shores where there are numbers of inhabitants, and from whence they have been frequently pursued. Along the desert coasts, where they seldom meet with any interruption from man, they are bold and intrepid, and make a very desperate resistance; but a slight blow on the nose immediately kills them, otherwise they will endure many wounds. Where they are not fre-

quently disturbed, they usually sleep very soundly; and it is then that the hunters surprize them. The Europeans who go into the Greenland seas upon the whale-fishery, surround them with nets, and destroy them, but the Greenlander takes them in a different manner: he paddles away in his little boat, and when he sees one of these animals asleep on the side of a rock, darts his lance with unerring aim, and buries its point in the animal's side. The Seal instantly plunges into the sea, and dives to the bottom; but the lance has a bladder fastened to one end, which keeps buoyant, and resists the animal's descent; it therefore rises frequently to the top of the water, and every time receives a stroke from the Greenlander's oar, till he at last dispatches it.

These animals are more wary in our climate, and very seldom suffer the hunter to approach them. They frequently appear upon the rocks of the Cornish coast, basking in the sun, or upon the inaccessible cliffs left dry by the ebbing of the tide. There they continue, and are extremely vigilant, continually raising their heads to look about them, to see if any enemy approaches: the only method therefore that can be taken is to shoot them; but if they happen to escape, they hasten towards the sea, throwing up stones and dirt behind them as they scramble along, at the same time expressing their fears by the most piteous moaning. Should they happen to be overtaken, they make a most vigorous defence with their feet and teeth.

The Seal is good food, and is often eaten by voyagers: it is killed for the sake of its skin, and for the oil which is made of its fat; a young seal yielding about eight gallons; their skins are used for waistcoats, covers for trunks, shot-pouches, and many other conveniences: those of the lake Baikal, are sold to the Chinese, who dye them, and sell them to the Mongals to face their fur-coats. These animals are the wealth of the Greenlanders, supplying them with every necessary of life. At the tables of the great, the flesh of this animal was formerly found: among other extraordinary rarities, at a feast provided by archbishop Nevell for Edward the IVth, there were twelve Seals and porpoises provided.

The Seal indeed is common on most of the rocky shores of Great-Britain and Ireland, especially on the northern coasts. In Wales, it frequents the coasts of Caernarvonshire and Anglesea.

The natural history of this animal may be further elucidated by the following extracts from a letter of the reverend Dr. William Borlase, dated October 24, 1763.

"The Seals are seen in the greatest plenty on the shores of Cornwall in the months of May, June, and July.

"They are of different sizes, some as large as a moderate cow, and from that downwards to a small calf.

"They feed on most sorts of fish which they can master, and are seen searching for their prey near the shore, where the whistling fish, wraws, and pollacks resort.

"They are very swift in their proper depth of water, dive like a shot, and rise in a trice at fifty yards distance; so that weaker fishes cannot avoid their tyranny, except in shallow water. A person of the parish of Sennan saw, not long since, a Seal in pursuit of a mullet (that strong and swift fish:) the Seal turned it to and fro in deep water, as a greyhound does a hare: the mullet at last found it had no way to escape, but by running into shoal-water: the Seal pursued; and the former to get more surely out of danger, threw itself on its side, by which means it darted into shoaler water than it could have swam in with the depth of its paunch and fins, and so escaped.

"The



"The Seal brings her young about the beginning of autumn; our fishermen have seen two sucking their dam at the same time, as she stood in the sea in a perpendicular position.

"The head in swimming is always above water, more so than that of a dog.

"They sleep on rocks furrounded by the sea, or on the less accessible parts of our cliffs, left dry by the ebb of the tide; and if disturbed by any thing, take care to tumble over the rocks into the sea. They are extremely watchful, and never sleep long without moving; seldom longer than a minute; then raise their heads, and if they hear or see nothing more than ordinary, lie down again, and so on, raising their heads a little, and reclining them alternately in about a minute's time. Nature seems to have given them this precaution, as being unprovided with auricles, or external ears; and consequently not hearing very quick, nor for any great distance."

#### The GREAT SEAL.

This animal is called the great sea-calf by Mr. Buffon; it resembles the former, but grows to the length of twelve feet. There was one described in the Philosophical Transactions, which was seven feet and a half long, though so young as hardly to have any teeth: the full growth of the common Seal is about six feet. This animal, which is considered as the largest of the Seal family, inhabits the coast of Scotland, and the south of Greenland. The skin is very thick, and is used by the Greenlanders to cut thongs out of for their Seal fishery. This is perhaps the same with the great Kamtschatkan Seal, weighing about eight hundred pounds, and called by the Russians, Lacktach.

#### The HOODED SEAL.

It has a strong folded skin on the forehead, which it can at pleasure throw over its eyes and nose, to defend them from stones and sand in stormy weather. The hair of this animal is white, with an under-coat of thick black wool, which makes it appear of a fine grey. It inhabits the south of Greenland and Newfoundland; and in the last mentioned place is called the Hooded Seal. The hunters say they cannot kill this animal till they remove the integument on the head.

There is a variety which inhabits Greenland, with rough bristly hair, intermixed like that of a hog, and of a pale brown colour. The natives make garments of its skin, turning the hairy side inwards.

#### The HARP SEAL.

This animal has a pointed head, and a thick body, of a whitish grey colour, with two black crescents on the sides, the horns pointing towards each other: but it does not attain this mark till the fifth year, and before that period, changes colour annually: the Greenlanders distinguish it by different names every year. It inhabits Greenland and Newfoundland, and is the most valuable kind: the skin is the best and the thickest, and it produces the most oil. It grows to the length of nine feet.

There is a variety of this species in the lake Baikal; it is a large kind with yellow hair, and a large chestnut-coloured mark on the hind part of the back, covering almost a third part of the body.

#### The LITTLE SEAL.

This is a little sea-calf of Mr. Buffon, and has the four middle teeth of the upper jaw bifurcated, and two in the middle of the lower jaw are trifurcated. It has only the rudiment of an ear: the hair is soft, smooth, and longer than in the common Seal: the colour is dusky on the head and back, and brownish beneath. The webs of the feet extend considerably

beyond the toes and nails, and the length of the animal is from two to three feet. It inhabits the sea near the island of Juan Fernandez, and the Seal hunters affirm that they often observe a small species of about two feet, or two feet and an half in length, on the coast of Newfoundland. Mr. Buffon was certainly imposed on, when he was informed that the specimen he saw in the French king's cabinet, came from India; Dampier, and many modern voyagers to the East-Indies, having asserted that they never saw any Seals there.

#### The URSINE SEAL, or the SEA BEAR.

There are three marine animals, called the sea-lion, the Sea Bear, and the Manati, which keep a particular situation, and seem divided between the north-east of Asia, and the north-west of America, in the narrow seas between these vast continents. From June to September they inhabit the islands that are scattered in the seas between Kamtschatka and America, in order to propagate and bring forth their young in full security. In September they quit their stations, greatly emaciated: some returning to the Asiatic, and others to the American shores; but, like the sea-otters, they are confined to those seas between lat. 50 and 56.

The Ursine Seal, or Sea Bear, leads a most indolent life during the three months in summer. They are extremely fat when they arrive at the islands; but while they remain there they are hardly ever in motion, confining themselves for whole weeks to one particular spot, and sleeping a great part of the time: they eat nothing, and are totally inactive, except the employment the females have in suckling their young. They live together in families, each male having a great number of females, which he watches with the jealousy of an eastern monarch. Though they are assembled by thousands on the shores, each family is separated from the rest. The old male animals, which are destitute of females, or deserted by them, live apart, and are excessively splenetic, peevish, and quarrelsome. They are remarkably fierce, and so attached to their old haunts, that they would sooner die than be driven from them. They have a strong scent like that of the goat. If another approaches their station, they are roused from their indolence, and immediately snap at it, and a combat naturally ensues. In the conflict they perhaps intrude upon the premises of another, which instantly excites his indignation, so that the discord sometimes becomes universal.

The other males are also easily offended: the principal cause of their disputes is when another attempts to seduce one of their mistresses, or a young female of the family: this insult infallibly produces a combat, and the conqueror is immediately attended by the whole seraglio, who always desert the unhappy vanquished. Sometimes a quarrel arises from their interfering in the disputes of others; and their battles are generally terrible: the wounds they give and receive are very deep, and resemble the cuts of a sabre. At the conclusion of a battle, they usually plunge into the sea to wash away the blood.

The male is very fond of his young, and if any person endeavours to take away his cub, he stands on the defensive, while the female carries it away in her mouth: but if she should happen to drop it, the male immediately quits the enemy, chastises her, and beats her against the stones, till she is ready to expire: when she recovers, she presents herself in the most suppliant manner to the male, falls down submissively before him, and washes his feet with her tears, while he is stalking about in the most insulting manner: but if the cub is carried off, he testifies the deepest affliction, and shews all the tokens of great concern. As the female usually brings but one at



a time, and never more than two, it is probably on that account that he is the more sensibly affected with his misfortune.

These animals are very swift in the water, and swim at the rate of seven miles an hour. When wounded, they will seize the boat in which their enemies are, and carry it along with great impetuosity; and sometimes they even sink it.

The male is considerably larger than the female. The bodies of each are of a conic form, being very thick before, and tapering to the tail. The length of a large one is about eight feet, and the greatest circumference about five: the weight about eight hundred pounds. The nose projects somewhat like that of a pug-dog, the nostrils are oval, the lips thick, and the whiskers long and white. When the mouth is closed, the teeth lock into each other: in the upper-jaw are four cutting teeth, each having two prongs, and on each side is a small sharp canine tooth, bending inwards, with another near it which is larger: the grinders, which resemble canine teeth, are six in number in each jaw: there are four cutting and two canine teeth in the lower-jaw, but only four grinders in each jaw; making in the whole thirty-six teeth. The tongue is slit, and the eyes large and prominent, which it can cover at pleasure with a fleshy membrane: the ears are small and sharp-pointed, hairy without, and smooth within. The length of the fore legs is about two feet, on which are toes which are covered with a naked skin, so that externally they seem a shapeless mass, and have only the rudiments of nails to five latent toes: the hind legs, which are about twenty-two inches long, are fixed to the body quite behind, in some degree like those of Seals, but the animal is capable of bringing them forward, and even uses them to scratch its head. These feet are about a foot broad, and are divided into five toes, each divided by a large web. The length of the tail is not above two inches.

The hair of these animals is long and rough, beneath which is a soft down, of a bay colour: their general colour is black, but the hairs of the old ones are tipped with grey: the females are ash-coloured. The flesh of the old males is very nauseous, but that of the females resembles lamb, and the young ones, when roasted, are as delicate eating as sucking pigs.

#### NATURAL HISTORY of the SEA-LION.

**T**HE male has an arched projecting snout, hanging five or six inches below the under jaw; the eyes are large, and the whiskers long; the hair on the body is short, and of a dun colour; that on the neck is a little longer: the feet, which are short and dusky, have five toes upon each, furnished with nails; the hind-feet have the appearance of large fins. The length of a full grown male is about twenty feet, and the greatest circumference about fifteen. The female has a blunt nose, knotty at the top, and wide nostrils: the fore legs are twenty inches long, and the toes are furnished with flat oblong nails: instead of legs, the hind parts are divided into two large forked fins, and it has no tail. The body of this animal is covered with short rust-coloured hair; and the length, from the nose to the fins, is about four yards, and the greatest circumference about two yards and an half.

These animals inhabit the seas between Kamtschatka and America. They are seen in great numbers in June and July, which is their breeding season, on the islands which they resort to in order to suckle their young on shore. The male shews no great attachment to the young, but the female is excessively fond of them, and is upon those occasions

remarkably fierce. One of lord Anson's sailors was killed by the enraged dam of a whelp which he had robbed her of. In the evening both male and female swim a little way out to sea, the latter carrying the young on her back, which the male frequently pushes off, meaning, perhaps, by that means to teach it to swim.

Like the sea-bear, they arrive on the breeding islands very fat and full of blood. When these animals are in motion, they have the appearance of a large skin full of oil, from the tremulous movement of the blubber which is sometimes a foot thick, on which account the Spaniards call them wolves of oil. One of these animals has been known to yield a butt of oil, and they are so full of blood, that two hogheads have been filled with what has come from one animal. The flesh, though not excellent, is eatable: It was eaten by lord Anson's people under the denomination of beef, to distinguish it from the flesh of seal, which they called lamb.

Though the old animals have a tremendous appearance, they are excessively timid, except at the breeding season. At other times they plunge into the water with great precipitation; or if awakened from their sleep by blows, or any loud noise, they are in the utmost terror and confusion, falling down and trembling in every part; but, when they perceive it is impossible for them to escape, they grow desperate, roar tremendously, and attack their enemy with uncommon fury. The Kamtschatkans either shoot them with poisoned arrows, or kill them in their sleep with lances. They make shoes of the skin, and sometimes cut it into cords. The blubber and the flesh they esteem very palatable; but the Kamtschatkans make a jelly from the feet, which they think delicious.

Like the former, these animals associate in families, but in smaller numbers: the males are equally jealous of their mistresses, and have frequently bloody battles upon their account. A Sea Lion of superior courage has a greater number in his seraglio than the others. In the Kamtschatkan seas, they generally make choice of some insulated rocks for their station, where their roar is to be heard at the distance of two miles; the cry of the young resembling the bleating of sheep. These animals are of a heavy inactive disposition, fond of wallowing in miry places, and, like swine, lying one upon another, making a noise like the grunting of those animals, and sometimes snorting like horses in full vigour. As they are very inactive on land, a centinel is placed by each herd to prevent a surprize, who, at the appearance of danger, gives a certain signal to the rest. These animals abstain from food in the breeding season, and before that time is elapsed, become exceeding lean. At other times, they feed on seals, fish, and sea-otters.

#### NATURAL HISTORY of the MANATI.

**T**HIS animal, in nature, very nearly approaches the whale. Like the whale, it brings forth in the water, and like the whale, suckles its young in that element. Like the whale, it has no voice, and, like that animal, has an horizontal broad tail, without even the rudiments of hind feet. Indeed what are called feet, are little more than fins, serving for swimming; they are never used to assist the animal in walking, or landing, for it never goes ashore, nor ever attempts to climb the rocks, like the seal and the walrus.

In the head and body, the Manati is shaped somewhat like the seal; the fore legs or hands are also very much in the same manner, short and webbed, but having only four claws; these too are proportionably shorter than in the other animal, and placed nearer



nearer the head; consequently they are not adapted to assist its motions upon land. But in the hinder parts, it differs greatly from all the animals of the seal kind; the tail being perfectly that of a fish, and extended like a fan, without even the vestiges of those bones which form the legs and feet of others of the seal kind.

These animals are of an enormous size: Dampier asserts that some of them are twenty-eight feet long, and weigh eight thousand pounds. The skin, which is of a blackish colour, is very tough and hard, and full of inequalities, like the bark of oak, on which are scattered a few hairs, like bristles, about an inch long. In proportion to the animal, the eyes are exceeding small, not exceeding those of a sheep in size. It is destitute of external ears, having only two orifices which are so small as hardly to admit a quill. The tongue is pointed, and very small. It has no teeth, instead of which it has two solid white bones, extending the whole length of both jaws, which serve instead of grinders. The lips are double, and near the junction of the two jaws, the mouth is full of white tubular bristles answering the same purpose as the laminæ in whales, to hinder the food from running out with the water. The lips are also full of bristles, serving, instead of teeth, to cut the strong roots of the sea-plants, which floating ashore point out the vicinity of these animals.

The female Manati produces but one at a time, which she holds with her paws to her bosom, where it sticks close, and accompanies her wherever she goes. The Manati can hardly be called amphibious, as it never entirely leaves the water, only raising its head out of the stream, to reach the grass on the sides of the rivers. It feeds entirely upon vegetables, and therefore never chooses to go far in the open sea, but frequents the edges of the shores, and chiefly the large rivers of South America, where it is often found above two thousand miles from the ocean. It is also found in the seas near Kamtschatka, where it feeds upon the weeds which are growing near the shore. At the bottom of some of the Indian bays, these animals are seen harmlessly grazing among turtles and other crustaceous fishes, neither offering nor fearing any outrage. In calm weather these animals, when unmolested, keep together in large companies near the mouths of rivers. In the time of flood, they come so close to land that a person may stroke them with his hand.

They live in small families, consisting of a male, a female, a half-grown young one, and a very small one; each family not being far distant from another. The females oblige their young to swim before them, while the other old ones surround and guard them on every side. The affection between the male and female is very strong; for, if the latter should happen to be attacked, the former will defend her to the utmost; and if she is killed, he attends her body to the shore, and for several days after continues to swim about the place at which she was landed. These animals bring forth in autumn, and are supposed to go with young about a year.

The Manati has no voice nor cry, and makes no kind of noise except what proceeds from breathing. The internal parts of this animal resemble those of an horse, its intestines being longer than any other creature, the horse only excepted.

These animals are vastly voracious, and when their hunger is appeased, they fall asleep on their backs. During their repast, they are so intent upon their food, that any person may go among them and make choice of which he pleases. Peter Martyr informs us that one of these animals lived in a lake of Hispaniola for twenty-five years, which was so tame as to come to the edge of the shore on be-

ing called, and would even perform the part of a ferry, carrying several people on its back at once to the opposite shore. The back and sides of these animals are usually above water, and as their skin is filled with a species of louse peculiar to them, great numbers of gulls are continually perching on their backs, and picking out the insects.

They remain the whole year in the American and Kamtschatkan seas, but they are so very lean in winter that you may even number their ribs. They are usually taken by harpoons, and after they are struck, it requires the united strength of thirty men to draw them on shore. Sometimes when they are transfixed, they will fasten their paws upon the rocks, and stick so close as to leave the skin behind them before they can be forced off. When one of these animals is struck, its companions swim to its assistance; some of which endeavour to overturn the boat by getting under it; others attempt to break the rope, by pressing it down; and others strike at the harpoon with their tails, with a view of forcing it out, in which they often succeed.

When exposed to the sun, the fat or blubber of the Manati, which lies under the skin, has a most delicious smell and taste, and is far superior to the fat of any other sea animal: it has also this peculiar property, that the heat of the sun will not make it grow rancid, or injure it in the least. It tastes like the oil of sweet almonds, and in all cases where butter is used, it is a most excellent substitute. Any quantity of it may be taken without the least injury, as it has no other effect than that of keeping the body open. The fat of the tail is of a harder consistence, and when boiled is more delicate than the former. The flesh is redder and coarser than beef, and may be kept a great while in the hottest weather, without putrifying. It requires a long time in boiling, and afterwards has somewhat the taste of beef. The fat of the young ones has the flavour of pork, and the lean resembles veal. Some are of opinion, that the flesh of this animal resembles that of a turtle, which is indeed extremely probable, since they are found in the same element, and live upon the same food. The turtle is a delicacy well known among us, and is highly prized by the voluptuaries of the city of London. When our luxuries are sufficiently heightened to introduce the Manati, a single animal would be sufficient for the feast of a lord mayor.

#### NATURAL HISTORY of the SEA APE.

MR. Stellar describes a very singular animal, which he saw on the coast of America, which he calls the Sea Ape. Its head resembles that of a dog, its ears are short and erect, its eyes large, and it has a kind of beard on each lip. The length of its body is about five feet, and its form thick and round, but largest near the head, and tapering to the tail, which has two prongs. The body is covered with thick hair, which is grey on the back, and red on the belly; but we never could discover either feet or paws. It was extremely frolicsome, and diverted itself with variety of monkey tricks; sometimes swimming on the one side of the ship, and sometimes on the other, observing it with great amazement. It frequently came so near the vessel, that it might be touched with a pole; but if any person moved, it would immediately retire. Sometimes it would raise itself so as to have a third part of its body out of the water, and continue erect for a considerable time; then suddenly darting under the ship, appear in an instant on the other side, in the same attitude; and this it would repeat for thirty or forty times together. Sometimes it would bring up a sea plant, which it would wantonly toss about and catch again in its mouth, playing a number of fantastic tricks with it.



## NATURAL HISTORY of the BELUGA.

THE Beluga is another obscure animal of this class; it is found in the sea between Kamtschatka and Tartary; in that between Kamtschatka and America, and in the frozen sea near the mouth of the Jenesei. It measures from fifteen to twenty feet long, and three or four feet round: in its feet and tail it agrees with the seal, but its teeth are like

those of a cow. On the neck are two holes, from which water issues as from a spout. It has a small quantity of hair on its body, but so thinly scattered, that the skin, which is white, appears through it.

These animals live on fish, and assemble in large numbers. They carry their young upon their backs, and avoid shallow places; seldom going up rivers or very near the shore.

## C H A P. XIV.

Containing the NATURAL HISTORY of the BAT and its numerous Varieties, viz. the LONG-EARED, the MADAGASCAR, the VAMPYRE, the JAVELIN, the LEAF, the CORDATED, the PERUVIAN, the BULL-DOG, the BEARDED, the SENEGAL, the STRIPED, the HORSE-SHOE, and the NOCTULE.

## NATURAL HISTORY of the BAT.

SOME naturalists have thought animals of the Bat kind so much partaking of the nature of the bird and the beast, that they have been at a loss in which rank to place them; but these doubts exist no longer: they are now universally allowed to take their place among quadrupeds; to which they are evidently entitled by their hair, their teeth, and their bringing forth their young alive; as well as by the rest of their habitudes and conformations. The Bat has indeed been placed among birds by Pliny, Gesner, and Aldrovandus, but they did not consider that it wanted every character of that order of animals, except the power of flying. This animal indeed, in some measure, presents the appearance of a bird, when it is seen with an aukward and struggling motion, supporting itself in the air at the dusk of the evening; but naturalists, who ought to watch its habitudes, and inspect its formation, are inexcusable for concurring in the mistake. It not only brings forth its young alive, as already mentioned, but it also suckles them: its mouth is furnished with teeth; its lungs are formed like those of quadrupeds; its intestines and its skeleton perfectly resemble them.

The species of Bat which is most common in England, is about the size of a mouse, or nearly two inches and an half in length. The members, which are usually called wings, are, in reality, only the four interior toes of the fore-feet, produced to a great length, and connected by a thin membrane, which also extends to the hind legs and the tail. The first toe is quite loose, serving as a heel when the animal walks, or as an hook, when it chooses to adhere to any thing. The hind feet are disengaged from the surrounding skin, and divided into five toes, furnished with pretty strong claws, somewhat resembling those of a mouse. The skin or membrane by which it flies is of a dusky colour: the body is covered with a short mouse-coloured fur, tinged with red. The eyes are very small, the ears short, and the extent of the wings nine inches.

This animal makes its first appearance in England early in summer, and begins its flight in the dusk of the evening. It usually haunts the sides of woods, glades, and shady walks; and frequently skims along the surface of water in pursuit of gnats and insects. These, however, are not its only food, for it will not refuse meat of any kind, wherever it can find it. The flight of the Bat is a laborious irregular movement, and, when

interrupted in its course, it finds it difficult to prepare for second elevation; so that if it happens to strike against any object, and falls to the ground, it seldom can escape. It never appears but in the most pleasant evenings, when its prey are generally abroad, and always flies in pursuit with its mouth open. At other times it continues in its retreat, which is generally the chink of a building in a ruinous state, or the hollow of a tree. Even in summer, this little animal sleeps the greatest part of its time, never venturing out by day-light, nor in rainy evenings. It is in quest of prey but a small part of the night, as it presently satisfies the demands of hunger, and returns again to its hole.

At the approach of winter, the Bat prepares for its state of lifeless inactivity, and always prefers a place where it may be safe from interruption, to where it may be conveniently and warmly lodged. It retires into caves, buildings in a ruinous situation, the roofs of houses, or hollow trees, where it remains during the whole winter, in a state of torpid inactivity; suspended by the hind-feet, and closely wrapped up in the membranes of the fore-feet, regardless of the external damps that surround it. This is the only animal that will venture to remain in frightful subterranean abodes, where it continues in a state of torpidity, unaffected by every change of weather.

Those, however, which are not sufficiently provident to procure themselves a deep retreat, where the cold and heat do not essentially vary, are sometimes exposed to great inconveniencies; for, in the midst of winter, the weather is sometimes so extremely mild as to warm them prematurely into life, and induce them to quit their holes in pursuit of food, at a time when nature has not provided a supply. These unfortunate adventurers have seldom strength to return; but, having exhausted themselves in a vain pursuit, after insects which are not to be found at that season of the year, are destroyed by the owl, or some other animal of prey.

This creature brings forth in summer, and generally produces from two to five at a time. We are assured, by Linnæus, that the female prepares no nest for her young. She is satisfied with the first hole she meets, where, sticking herself up by her hooks against the sides of her apartment, she suffers her young to hang at the nipple, and continue thus for the first and second day. But, when she becomes very hungry, and finds it absolutely necessary to go abroad, she sticks her little ones against the wall, to which



which they firmly adhere, and patiently wait till her return.

From what has been said, it is very apparent that this animal is closely allied to the quadruped race, and its similitude to that of birds is infinitely less striking. Nature, indeed, has furnished birds with very strong pectoral muscles, to move the wings and direct their flight; so has it also furnished this animal: but the great labour required in flying soon fatigues it, and, though birds can continue whole days upon the wing, the Bat becomes weary in less than an hour, and returns to enjoy the darkness of its retreat.

This Bat, so common in Great Britain, may be considered as an harmless inoffensive animal; though it sometimes steals into a larder, and like a mouse, commits its petty thefts upon the fattest parts of bacon. But this does not often happen, it being principally employed in pursuing insects that are much more noxious to us than this animal can possibly be.

#### The LONG-EARED BAT.

The ears of this animal are thin, almost pellucid, and above an inch long. The body and tail are only one inch three quarters long. This animal, and all other Bats, except the ternate, and the horse-shoe, have a smaller, or internal ear, serving as a valve to the greater, when the animal is asleep.

#### The GREAT BAT of MADAGASCAR.

The Bats which are seen in Great Britain, are inoffensive and minute; incapable, from their size, of injuring mankind, and not sufficiently numerous to incommode them; but in the East and West Indies, there is a larger race of Bats, that are truly formidable; one of them is a dangerous enemy; but, when they unite in flocks, they become dreadful. Des Marchais says, that if the inhabitants of the African coast, were to eat animals of the Bat kind, as they do in the East Indies, they would never want a supply of provisions. They are so numerous, that, when they fly, they obscure the setting sun: early in the morning, they are seen sticking upon the tops of trees, and clinging to each other like bees when they swarm. The Europeans often amuse themselves with shooting them, and the negroes are expert in killing them; but they regard the Bat with horror, and would not eat it if they were starving.

The largest that we have any certain account of, is the great Bat of Madagascar, called by Mr. Buffon the Roufette. This animal is about a foot long from the tip of the nose to the insertion of the tail; and its extent from the tip of one wing to the tip of the other, is about four feet. It has large canine teeth; four cutting teeth above, and four below: the nose is black and sharp, and the ears large and naked; the talons are very crooked, strong, and compressed sideways. It has no tail. These animals vary in colour, some being entirely of a reddish brown, others of a brighter red, and others dusky. It resembles the common Bat in the form of its wings, in its manner of flying, and in its internal conformation. This formidable creature is found in Guinea, Madagascar, and all the islands from thence to the remotest in the Indian Ocean. When they repose, they stick themselves on the tops of the tallest trees, and hang with their heads downward; but, when they are in motion, they sometimes settle upon animals, and even upon man himself. They devour indiscriminately fruits, flesh, and insects, and are so extremely fond of the juice of the palm-tree, that they will intoxicate themselves with it till they drop to the ground. At night they are heard in the forests at more than two miles distance, with a most horrible din; but they usually begin to retire at the

approach of day. Nothing is safe from the depredations of these noxious animals; they destroy fowls and domestic animals, unless they are carefully secured, and frequently fasten upon the inhabitants themselves, attacking them in the face, and inflicting very terrible wounds. It is very probable, as Mr. Buffon remarks, that the ancients have taken their idea of harpies from these fierce and voracious creatures, as they both seem to concur in many parts of the description, being equally cruel, deformed, greedy, and uncleanly.

The Indians eat these animals, and say the flesh is extremely good, especially at certain times of the year when they are very fat. The French, who inhabit the Isle of Bourbon, boil them in their bouillon to give it a relish: but the Negroes hold them in abhorrence. Many are seen much larger than that abovementioned. Beckman measured one that was five feet four inches from tip to tip of the wing; and Dampier saw another which spread farther than he could reach with extended arms. Their bodies are from the size of a pullet to that of a dove: their cry is dreadful, their smell rank, they resist fiercely when attacked, and their bite is terrible.

Linnæus gives this species the title of Vampyre, supposing it to be the kind which draws blood from people in their sleep; but Mr. Buffon is of a contrary opinion, ascribing that faculty to a species found only in South America. Mr. Pennant differs from both those naturalists, and very justly observes, that "there is reason to imagine that this thirst after blood is not confined to the Bats of one continent, nor to one species; for Bontius and Nieuhoff inform us, that they of Java seldom fail attacking those who lie with their feet uncovered, whenever they get access; and Gumilla, after mentioning a greater and lesser species, found on the banks of the Orenoque, declares them to be equally greedy after human blood."

Persons who have been thus attacked, have sometimes almost passed from a sound sleep into eternity. The Bat is so dextrous a bleeder as to insinuate its sharp-pointed tongue into a vein unperceived, and to suck the blood till it is satiated; at the same time fanning with its wings, and agitating the air, which, in that hot climate, lulls the sufferer into a still sounder sleep. It is therefore dangerous to repose in the open air, or to leave open any entrance to these noxious animals. Nor do they always confine themselves to human blood; for Mr. Condamine, in his voyage to South America, informs us, that in certain parts of America they have destroyed all the great cattle which were introduced there by the missionaries.

#### The VAMPYRE.

This animal, though less formidable, is more mischievous than the former. It is furnished with a horn, and its ears are extremely broad, long, and upright. The hair on the body is ash-coloured and pretty long: the membrane extends from one hind-leg to the other: it has no tail; but from the rump extend three tendons, terminating at the edge of the membrane. It inhabits South-America, lives in the palm-trees, and grows very fat.

This is the Bat which Mr. Buffon supposes to be the principal blood-sucker. It is agreed by all travellers that this Bat is possessed of a faculty of drawing the blood from persons sleeping, but still a very strong difficulty remains to be accounted for; the manner in which they inflict the wound. Ulloa supposes it to be done by a single tooth; but that is utterly impossible, as the animal cannot infix one tooth, without all the rest accompany its motions, the teeth of the Bat kind being pretty even, and the mouth small. Mr. Buffon therefore supposes the wound to be inflicted by the tongue; but others



others imagine that the animal is endowed with a strong power of suction; and that, without inflicting any wound, by continuing to draw, it so greatly enlarges the pores of the skin, that the blood at length passes; and, in confirmation of this opinion, we are told it cannot injure any animal that has a thick skin.

#### The JAVELIN BAT.

It is of the size of a common Bat, has large pointed ears, and an erect membrane at the end of the nose in the form of an ancient javelin, having two upright processes on each side. It has no tail, its fur is ash-coloured, and it inhabits the warm parts of America.

#### The LEAF BAT.

This is the *Feuille* of Mr. Buffon; it has small round ears, and a membrane on the nose of the form of an oval leaf. It has a web between the hind-legs, but no tail. The fur is of a mouse-colour, tinged with red. This is also about the size of a common Bat. It inhabits Jamaica, Surinam, and Senegal. In Jamaica it lives in caves in the woods. It feeds on the prickly pear.

#### The CORDATED BAT.

The colour of the face of this animal is a light red, and that of the body still paler. Its ears are very broad and long, and, at the end of the nose, it has a membrane in the shape of a heart. It has a web between the hind-legs, but no tail. It inhabits Ceylon, and the ile of Ternate, one of the Moluccas.

#### The PERUVIAN BAT.

The body of this Bat is about the size of a pretty large rat; the colour of the fur is an iron grey; and the extent of the wings two feet five inches. It has a head like a pug-dog, large straight-pointed ears; and, in each jaw, two canine teeth, and two small cutting teeth. The tail is inclosed in the membrane, which joins to each hind-leg, and is also supported by two long cartilaginous ligaments involved in the membrane.

There is a variety with a large head and hanging lips, like the chops of a mastiff. This differs from the former in size, being less; but agrees in all other respects. It inhabits Peru and the Mosquita shore.

#### The BULL-DOG BAT.

The length of the body of this animal is a little more than two inches, and the extent of the wings nine inches and an half. It has broad round ears, the edges touching each other in front; the nose is thick, and the lips hang down: the upper part of the body is of a deep ash-colour, the lower-part paler, and the tail long; the five last joints of which are disengaged from the skin or membrane. It inhabits the West-Indies.

#### The SENEGAL BAT.

The length of this animal, from the nose to the rump, is about four inches, and the extent of the wings twenty-one inches. It has a pointed nose, and a long head, and the ears are short and pointed: the head and body are of a tawny brown, mixed with ash-colour; the belly is somewhat paler. The two last joints of the tail extend beyond the membrane. It is a native of Senegal.

#### The BEARDED BAT.

This is a small species, with hair on the forehead, and very long hair under the chin: the nostrils are open for a great way up the nose; the ears are long and narrow. The upper part of the head and body are of a reddish brown; the lower parts of a dirty white, tinged with yellow. The tail is included in the membrane. It inhabits North America.

There is another species which inhabits North America, that is ten inches and an half from the nose to the tail, and the tail a little more than one inch; the extent of its wings is ten inches and an half.

#### The STRIPED BAT.

This is an inhabitant of Ceylon; it has a small short nose, and the ears are broad, short, and pointing forward: the upper part of the body is of a clear reddish brown, and the lower part whitish. The wings are striped with black, and sometimes with tawny and brown. The length of this animal, from the nose to the insertion of the tail, is about two inches.

#### The HORSE-SHOE BAT.

There is a greater and lesser variety of this animal; the greater is about three inches and a half long, from the nose to the tip of the tail, and the extent of its wings about fourteen inches. It has a membrane at the end of the nose, in the form of a horse-shoe; the ears are large, inclining backward, broad at the base, and sharp-pointed. It is destitute of the little or internal ear. The upper-part of the body is of a deep ash-colour, and the lower part whitish. The tail of this creature is inclosed in the membrane. It inhabits Burgundy, in France, and has lately been discovered in some parts of Kent.

#### The NOCTULE.

The length of this Bat is almost three inches, the tail almost two, and the extent of its wings thirteen; the ears are small and rounded, and the hair of a reddish ash-colour. It inhabits Great Britain and France, and never skims near the ground, but flies high in pursuit of prey.

Mr. Buffon also mentions the *Serotine*, the *Pipistrelle*, and the *Barbastelle*, which are all inhabitants of France, and have nothing peculiarly interesting, except that the *Pipistrelle* is the least of the Bat kind; not being an inch and a quarter long, and the extent of its wings not exceeding six inches and an half.





A

NEW, COMPLETE, and UNIVERSAL BODY, or SYSTEM of  
**NATURAL HISTORY;**

Being a Grand, Accurate and Extensive  
 Display of Animated Nature.

B O O K II.

*A New and Complete History and Description of BIRDS in general.*

INTRODUCTION concerning BIRDS in general.

**E**VERY part of nature appears furnished with inhabitants. The forests, the waters, and the depths of the earth have their respective tenants; while the yielding air, and those tracts of seeming space, too elevated for man to soar to, are traversed by multitudes of the most beautiful beings of the creation. Though every rank of animals seems calculated for its destined situation, yet none are more apparently so than Birds: they share the vegetable spoils of the earth, in common with the quadrupeds, and, to compensate for their want of strength, are supplied with swiftness: to avoid that power which they cannot oppose, they are endowed with the faculty of ascending into the air. In the scale of nature, it must be admitted that Birds fall below quadrupeds, and are less imitative of human endowments; yet they certainly are the next in rank, and greatly surpass fishes and insects, not only in the structure of their bodies but in their sagacity.

As Birds are chiefly formed to inhabit the empty regions of air, all their parts are suited to that purpose. Externally they seem surprisingly adapted for swiftness of motion. The shape of their body is sharp before, to facilitate its passage through the air; it then rises by a gradual swell, and falls off in an expansive tail, that assists in keeping it buoyant, while the fore parts are cleaving the air by their sharpness. They have, not unaptly, been compared to a vessel making its way through the water; the trunk of the body answering to the hold, the head to the prow, the tail to the rudder, and the wings to the oars.

Another cause of admiration in the external formation of Birds is the position of the feathers, which generally tend backwards; and thus by laying one way and over each other in an exact and regular order, answer all the purposes of warmth, speed, and security. That part of the feathers next the body is furnished with a warm and soft down, and the external part is arrayed with a double beard in two ranks, longer at one end than the other. These beards are a row of little flat thin laminæ, disposed

and inserted in a line, as perfect and regular as if their extremities had been cut with scissars. But lest these feathers should receive any injury by their violent attrition against the air, or imbibe the moisture of the atmosphere, the Bird is furnished with a gland behind, containing a quantity of oil, which it occasionally presses out with its bill, and lays over every feather that requires dressing. This gland, which is situated on the rump, is furnished with an aperture, surrounded with feathers somewhat like the pencil of a painter. Such poultry, however, as live principally under cover, have a smaller stock of this fluid than those which reside in the open air. The feathers of an hen, for instance, are pervious to every shower, but a swan, a goose, a duck, or a more-hen, and all such Birds as nature has directed to live upon water, have their feathers dressed with oil from the day of their quitting the shell: their magazine contains a provision of this fluid, proportioned to the necessity of its consumption. The flesh indeed contracts a flavour from it, which, in some, it renders so very rancid as to be unfit for food: but, if the flesh is injured by it, the feathers are improved, and made more valuable for all the domestic purposes to which they are usually applied.

The feathers, which form the cloathing of Birds, equally demand our admiration. The shaft of every feather is made proportionably strong, but hollow below to contribute to its lightness, and filled above with a pith to afford nourishment to the beard that springs from the shaft of the feather on either side. Nature has placed these feathers according to their length and strength, the largest and strongest having the greatest share of duty in flight. The beard of the feather does not consist of one continued membrane, because, if it were broken, it could not easily be repaired; it is therefore composed of a great number of layers, each layer somewhat resembling a feather, and lying against each other in close conjunction: these layers are broad, and of a semi-circular form towards the shaft of the feather, to add to their strength, and keep the closer to each other when in action. Towards the external part



of the beard or vane, these layers grow slender and taper; on their under side they are thin and smooth, but their upper external edge is parted into two hairy edges, with a different sort of hairs on each side, broad at bottom, and slender and bearded above.

The wings of Birds come next under consideration; in those which fly, they are usually placed at that part of the body which serves to poise the whole, and support it in the air. They answer to the four legs in quadrupeds, and, at the extremity of this, they have a kind of appendix, which is sometimes called the bastard wing. The quills with which this instrument of flight is furnished, differ from the common feathers only in their size, being considerably larger; but they spring from the deeper part of the skin, their shafts lying almost close to the bone. The beards of the strongest of those quills are broader on one side than on the other, contributing by that means to the progressive motion of the bird, and the closeness of the wing.

All Birds are furnished with two very strong pectoral muscles on each side of the breast bone. In quadrupeds, as well as in men, the muscles of the thighs and the hinder parts of the body, are by far the strongest; but in Birds it is otherwise; the pectoral muscles, which give motion to the wings, or arms, are of enormous strength, while those of the thighs are weak and slender. By means of these, a Bird can move its wings with a degree of strength which is almost incredible, when the size of the animal is considered. The flap of a swan's wing would break the leg of a man, and an eagle has been known to kill a man on the spot by a similar blow. Such is the force and lightness of the wing; that no machine, which human skill can contrive, is capable of giving such force to so light an apparatus. The art of flying, therefore, has so frequently been sought after in vain, and indeed it cannot possibly be attainable; for man cannot increase the force of his flying machine, without increasing its weight also.

In all Birds, nocturnal ones excepted, the head is smaller in proportion to the body than in quadrupeds, that it may more readily cleave the air in flying, and prepare a more easy passage for the body. Their eyes are also flatter and more depressed than in quadrupeds, and the pupil on each is encompassed by small plates of bone under the outer coat of the organ, to strengthen and defend it from injuries. Birds have also a kind of skin, called the nictitating membrane, with which they can with pleasure cover their eyes, as with a veil, though their eye-lids continue open. This membrane proceeds from the larger or more obtuse corner of the eye, and probably serves to wipe, cleanse, and moisten its surface. The eye of Birds is admirably adapted for vision, by a particular expansion of the optic nerve, which renders the impressions of external objects more vivid and distinct.

The sense of seeing, in birds, is infinitely superior to that of other animals; and indeed it appears necessary to the support and safety of those creatures. Were the eye less perfect, the Bird, from the rapidity of its motion, would strike against almost every object in its way; and it could hardly find subsistence unless possessed of a power to discern its food from above with astonishing sagacity. A kite, for example, from an almost imperceptible height in the clouds, darts on its prey with the most unerring aim; and an hawk perceives a lark at a distance beyond the reach of the human eye.

Birds have no external ears, being only furnished with holes to convey sounds to the auditory canal. The horned owl, indeed; and a few other Birds, seem to have external ears; but this appearance is occasioned by some feathers sticking out beyond the rest on each side of the head. These feathers en-

compassing the ear-holes in Birds, may perhaps supply the defect of the exterior ear, and collect sounds to be transmitted to the internal sensory. The extreme delicacy and sensibility of this organ is shewn by the facility with which some Birds learn tunes, and by the greatest exactness of their pronunciation in repeating words.

The sense of smelling appears equally perfect in the generality of Birds. Many of them scent their prey at a vast distance, and others are protected by this sense against their insidious pursuers. In decoys for catching ducks, the men who attend upon that business always keep a piece of turf burning near their mouths, upon which they breathe, lest the fowl should smell them and make its escape.

The legs and feet of Birds are made very light, for their easier transportation through the air. The toes of those which are calculated for the waters, are webbed; in others they are separate, the better to enable them to hold objects or cling to the branches of trees with safety. Such as have long legs, have also long necks, as they would otherwise be incapable of gathering up their food. But it does not naturally follow that those which have long necks should have long legs, for swans and geese, whose necks are extremely long, have very short legs, and these are better fitted for swimming than for walking.

The bones of every part of the body of Birds are extremely light and thin, and all the muscles very slight and feeble, except that which affords motion to the wings. The tail serves to counterbalance the head and neck, to guide the animal's flight like a rudder, and to assist when it is ascending or descending. If we particularly examine the internal parts of Birds, we shall find the same wonderful conformation fitting them for a life in air, and increasing the surface by reducing the solidity. Their lungs, which are usually called the sole, adhere to the sides of the ribs and back, but the ends of the branches of the wind-pipe open into them; while these have openings into the cavity of the belly, and convey the air drawn in by breathing into certain receptacles resembling bladders, extending the length of the whole body. The wind-pipe makes many convolutions or turnings in the bodies of some Birds, and it is then called the labyrinth. This difference of the wind-pipe is often found in animals that appear to be of the same species. For instance, the wind-pipe of the tame swan makes a straight passage into the lungs; while that of the wild swan, which to all external appearance seems the same animal, pierces through the breast-bone, and has several turnings there, before it comes out again and goes to enter the lungs. This is a difficulty which no naturalist has hitherto been able to account for. These turnings cannot be intended to form the voice, because those fowls which are without them are vocal: we cannot therefore ascertain whence some Birds derive that loud and various modulation in their warblings, but this we can venture to assert, that Birds, in proportion to their bulk, have much louder voices than animals of any other kind; for the screaming of a peacock is as loud as the bellowing of an ox.

Though Birds are destitute of a bladder for urine, they have large kidneys and ureters, by which this secretion is made, and carried away by one common canal.

From the simple conformation of Birds, they have, as may naturally be supposed, but few diseases: one, however, they are subject to, from which quadrupeds are exempt; this is their annual moulting; for, once in every year, all manner of Birds cast off their old covering, and obtain a new one. They are all disordered during the moulting season; the courageous Bird then loses its fierceness, and such as are weakly often expire under this natural operation.



ration. Additional feeding cannot at that season maintain their strength, when they always cease to breed; that nourishment which produces the young being wholly absorbed by the demand required for supplying the growing plumage.

Those, however, who have the management of singing-birds, have a method of accelerating this moulting-time. They enclose the bird in a dark cage, where, by keeping it excessive warm, they throw the poor little animal into an artificial fever. This produces the moult before its proper time; the old feathers fall off, and are succeeded by a new set, more brilliant and beautiful than the former. The bird-fanciers say this increases the vivacity of the animal, and improves its singing; but it should also be observed, that not above one bird in three survives the operation.

Nature has kindly provided that, in winter, when there are the fewest provisions, the appetites of birds shall be least craving. At the beginning of spring, when food begins to be plenty, the strength and vigour of these animals return. The abundance of provisions and the mildness of the season then incite to love, and all nature teems with life, which it seems disposed to continue.

At the return of spring, those vital spirits, which in some degree were locked up during the winter, begin to expand. Those warblings which had been hushed during the colder seasons, now begin to animate the fields, and every grove and bush resounds with the delightful concert. But this harmony of the grove, so much admired by man, is not meant for his amusement; it is usually the call of the male to the female; his efforts to amuse her during the times of incubation or sitting; or, it is a challenge between two males contending for the affection of a favourite.

Birds begin to pair at the approach of spring, and then provide for the support of a future progeny. The loudest notes upon these occasions are usually from the male; the hen expressing her consent in a short interrupted twittering. This compact, for a season at least, is faithfully observed: many birds live together for years with inviolable fidelity; and when one dies, the other does not long survive it. We must not, however, expect to find this conjugal fidelity among the poultry in our yards, where their freedom is abridged, and their manners corrupted by slavery: we must look for it in our fields and our forests, where nature continues in unadulterated simplicity, and where every little animal seems prouder of his progeny than pleased with his mate.

When fecundation is performed, the female begins to lay. Such eggs as have been impregnated, (and such only) are prolific; the others which are produced without any congress, continue barren, and become addled by incubation. But previous to laying, the nest is to be made, which is done with no small degree of assiduity, and apparent design. Some naturalists assert that birds of one kind always make their nests in the same manner, and of the same materials; but it is certain, that they vary this as the materials, places, or climates differ. The red-breast, for instance, makes its nest of oak leaves in some parts of England, and in other parts with moss and hair. Some birds that build a very warm nest in this island, are less solicitous in the tropical climates, where the heat of the weather promotes the business of incubation. In general, however, every species of birds has a peculiar kind of architecture, which is adapted to the number of eggs, the climate, or the respective heat of the animal's own body. Where the eggs are numerous, a warm nest is requisite, that the animal heat may be equally diffused to all. The wren, for instance, makes its nest very warm; for, having a great many eggs, it is necessary to distribute warmth to them in com-

mon. On the contrary, the plover has but two eggs, which its body is at once capable of covering, and consequently it is not so solicitous about the warmth of its temporary habitation. Climate sometimes occasions great alterations; some water-fowl, that make a very slovenly nest with us, are more particular in the structure of it in the cold regions of the north: where they take every precaution to make it warm, and some kinds are known to strip the down from their breasts, to line it more effectually.

Birds usually resort to hatch in those climates and places where their food is found in the greatest plenty, and always in that season when provisions are in the greatest abundance. Aquatic birds, and those of the largest kinds, select the places which are remote from man, their food in general being different from that which is cultivated by human labour. Some have only the serpent to fear, and fabricate their nests so as to hang upon the end of a small bough, forming the entrance from below, which secures them from the serpent, or the monkey tribes. But the small birds, which feed upon fruits and corn, and commit their petty thefts upon the produce of human industry, use every precaution to conceal their nest from man. On the contrary, the large birds, remote from human society, endeavour to render theirs inaccessible to wild beasts or vermin.

While the female is hatching, her patience is astonishing; neither the calls of hunger, nor the approach of danger, can force her from the nest. Though fat when she begins to sit, yet, before incubation is over, she is usually reduced to skin and bone. Ravens and crows furnish the female with food while she is sitting; but this is not the practice of most of the smaller birds: during the whole time the male sits upon some neighbouring tree, and soothes her with his singing, frequently taking her place when she is weary, or extremely hungry, and continuing upon the eggs till she returns. Sometimes, indeed, the eggs acquire too great a degree of heat, when the hen removes to let them cool a little, and afterwards returns with pleasure and perseverance to resume her task.

The production of young seems to be the great æra of happiness in animals of this class. At that time nothing can exceed their industry and spirit: in defence of its young, the most timid becomes courageous; and those of the rapacious kind are at this season uncommonly fierce and active: they hasten with their prey, yet throbbing with life, to the nest, and early initiate their young to scenes of slaughter and cruelty. Birds of a milder nature are not less busily employed: the minuter kinds discontinue their singing, being engaged in the more important pursuits of common subsistence.

While the young continue in the nest, the old ones provide them with a regular supply of food; and that one may not receive more nourishment than the rest, each of the young is served with the repast in turn. If they discover that man has been busy with their nest, or has handled the little ones, they sometimes abandon the place by night, and provide a more secure though less commodious retreat for their brood. When the whole family is fully plumed, and they are capable of avoiding danger, they are led forth in fine weather, and taught the paternal art of providing for their subsistence. They are conducted to the places where their food is to be found; they are instructed in the method of taking it and carrying it away; and then led again to the nest, where they continue a day or two longer. At length, when they are fully enabled to provide for themselves, the old ones, for the last time, take them abroad, conduct them to the accustomed places, and finally forsake them; all connection between them being totally at an end.

Those



Those birds which are hatched earliest in the season are the strongest and most vigorous: the animals themselves seem sensible of this, and endeavour to produce early in the spring; but if their endeavours are obstructed, by having their nests robbed, or any other accident, they still persevere in their efforts for a progeny, and it sometimes happens that they are retarded by a variety of accidents to the midst of winter. The number of eggs which any bird can lay in the course of a season, has never yet been ascertained; it is however certain, that such as would have laid but two or three at the most, if their eggs are taken from them from time to time, will lay at least ten or a dozen; and a common hen, if moderately fed, will lay about an hundred from the beginning of spring to the latter end of autumn. It is generally observed, however, that the smallest and weakest animals are the most prolific, while the rapacious and strong are abridged by sterility. Such kinds as are easily destroyed, are therefore as easily repaired; and nature, where she has denied the power of resistance, has given fertility as a compensation.

Birds in general, though naturally timid, are seldom scared away from their usual haunts. Though perfectly formed for a wandering life, and supplied with powers to satisfy all their appetites, and though they are so well qualified for changing place with ease and rapidity, yet most of them remain contented in the districts where they have been bred, seldom exerting their powers in proportion to their endowments. The rook, if undisturbed, will never desert his native grove; the blackbird does not quit his usual haunts; and the red-breast claims a certain district, from whence he seldom wanders, but, though seemingly mild, drives from his limits every one of the same species, without pity or remorse.

Fear, climate, or hunger are the chief incitements to migration; from one of these powerful motives those which are called birds of passage, annually forsake us for some time, and make their regular returns. The curiosity of mankind has been greatly excited by these annual emigrations, and yet few subjects remain so much involved in darkness. It is generally supposed, that the cause of their retreat from these parts of Europe, is either a scarcity of food at certain seasons, the alteration of the climate, or the want of a secure asylum from the persecution of man, during the times of incubation and bringing up their young. Thus, in Sweden, the starling at the approach of winter, finds subsistence no longer in that kingdom, and therefore descends every year into Germany; and the hen chaffinches of the same country are observed to fly through Holland in large flocks every year, to pass their winter in a milder climate. Some birds undertake journeys that might intimidate even human perseverance. In spring, the quails forsake the burning heats of Africa for the milder sun of Europe, and after continuing with us during the summer, steer their flight back to enjoy the temperate air of Egypt, which then begins to be delightful. These undertakings appear to have been preconcerted; some days before their departure, they assemble in some open place, and by a kind of chattering, seem to debate on the method to proceed. Their plan of operations being resolved upon, they all take flight together, and frequently appear in such immense numbers, that, to mariners at sea, they have the appearance of a cloud. The greatest number, among which are the strongest, carry their plan into execution; but there are many that grow weary in the way, and, quite exhausted by the fatigues of their flight, drop down into the sea, and sometimes by falling upon the decks of vessels, become an easy prey to the mariners.

Among the variety of water-fowl that visit our shores, how few are known to breed here? It is cer-

tain that they cannot quit this country merely for the want of food; to obtain a secure retreat, is perhaps their principal motive. This country is too populous for birds so shy and timid as these usually are: many species of birds which now migrate, remained with us throughout the year, when a great part of this island was an uncultivated tract of woods and marshes. In former times, the great heron and the crane bred familiarly in our marshes, and seemed to animate our fens; but they now forsake the country. Like most cloven-footed water-fowl, they built their nests upon the ground, and were exposed to every invader. But as agriculture increased, and the country grew populous, these animals were more and more disturbed. Until then they had little to fear, the surrounding marsh defending them from all the carnivorous quadrupeds, and their own strength from birds of prey; but upon the intrusion of man, they were at length obliged to seek, during the summer, some lonely habitation, at a distance from dangers and alarms.

Though the tribes of the duck kind are numerous, there are only five that breed here, viz. the tame swan, the tame goose, the sheldrake, the eider-duck, and a small number of the wild ducks. The rest unite with that amazing multitude of wild fowl which annually repair to the dreary lakes and deserts of Lapland, from the more southern countries of Europe: there they perform in full security the duties of incubation and nutrition. From the thickets of the forests in those regions, the ground continues moist and penetrable during the summer season; and the woodcock, snipe, and other birds with tender bills, can feed with convenience and ease; while those which are web-footed find plenty of food from the insects, which are incredibly numerous.

When they migrate from the north, they usually quit their retreat in September, and disperse themselves over all the southern parts of Europe. To observe the order of their flight is entertaining; sometimes they range themselves in a long line, and sometimes they march angularly, forming two lines which unite in the center, like the letter V reversed. The leader at the point seems to cleave the air, to facilitate the passage for those which are to follow; and, when he becomes weary of this laborious station, he retreats into one of the wings of the file, and is succeeded by a fresh commander. About the beginning of October, they make their appearance among us: at first they circulate round our shores, and afterwards by severe frost are compelled to repair to our lakes and rivers. Some, however, of the web-footed fowl, of hardier constitutions than the rest, endure the rigours of their northern climate the whole winter; but when the winters are uncommonly severe, they find it necessary to seek for more southern skies. In these cases only we are visited by the diver, the wild swan, and the swallow-tailed sheldrake; nothing but the severity of their own winters at home being able to compel them to visit our coasts.

It may appear astonishing how such irrational animals should be able to perform such long journeys; how they should know whither to steer, when they engage in such an enterprize; but the same instinct which governs all their actions, perhaps operates here. Indeed they rather follow the weather than the country; they steer only from colder or warmer climates into those of an opposite nature; and, as they proceed, finding the variations of the air agreeable to them, they go on till they discover land to repose on.

There is, however, a circumstance attending the migration of swallows, which wraps this subject in great obscurity. At the approach of the European winter, it is universally allowed that they are



seen, in amazing numbers migrating into warmer climates: it is also well attested that their return into Europe is about the beginning of summer, but it is equally true that many of them continue torpid here during the winter, making their retreats, like bats, into old walls, or the hollow of trees; or even sinking into the deepest lakes, where they find security for the winter season, by remaining in clusters at the bottom.

It seems to be difficult to account for this difference in these animals, thus variously preparing to encounter the winter. It has been supposed that in some of them the blood might lose its motion by the severity of the cold, and thus the Bird became torpid; but Mr. Buffon, by placing many of this tribe in an ice-house, discovered that the cold by which their blood was congealed was also fatal to them. It therefore remains a doubt to this hour, among naturalists, whether there may not be a species, apparently like the rest, but differently formed within, in order to fit them for a state of insensibility during the winter here. Some indeed have suggested that those which were found thus torpid, were such only as were too weak, or hatched too late to join in the general emigration. But it was upon such as these that Mr. Buffon tried his experiment, and they all died under the operation.

Though there are some birds, which by emigrating, become inhabitants of almost every part of the earth; yet in general every climate has Birds peculiar to itself. Those of the Temperate Zone are not very remarkable for the beauty of their plumage, but the smaller kinds fully compensate for this defect by the melody of their voices. The Birds of the Torrid Zone are bright, vivid, and beautiful in their colours, but are either totally silent, or have most horrible screaming voices. The Frigid Zone, where the seas abound with fish, is stocked with Birds of the aquatic kind, in much greater plenty than in Europe.

Birds, in all countries, live longer than the quadrupeds or insects of the same climate. Even the life of a man is short when compared to that which some of these animals enjoy. It is said that swans have lived three hundred years; geese have been known to live eighty years; and linnets and other small Birds are often found to reach fourteen or fifteen years, though imprisoned the whole time in cages.

Birds in general, are proportionably smaller than quadrupeds; that is, the greatest of one class is far superior in magnitude to the greatest of the other. The ostrich, which is the largest of Birds, bears no proportion to the elephant; and the smallest humming-bird, which is the least of the class, is considerably smaller than the mouse. The extremities of nature are plainly discernible in these; the ostrich seemingly covered with hair, and incapable of flight, approaches the quadruped class; while the humming-bird, which does not exceed the humble bee in magnitude, and has a fluttering motion, seems nearly allied to the insect. But these extremities are rather objects of human curiosity than utility. It is the middle order of Birds which man has taken under his protection, and which administer to his pleasures or necessities. How far these animals are capable of instruction is manifest to those who have the management of hawks; and a very surprising instance of this was seen a few years ago in London: a Canary Bird was taught to pick up the letters of the alphabet, and to place them at the word of command, so as to spell the name of any person in company. The motions which upon this occasion were given by the master, and obeyed by the little animal, were unobserved by every other spectator.

The most obvious distinction of Birds is those

that live by land, and those that live by water; land and water fowl are easily distinguishable by the legs and toes. Land Birds have their toes divided, without any membrane or web between them, and seem calculated for the purposes of running, grasping or climbing: but the legs and feet of water fowl are formed for the purposes of wading in the water, or swimming on its surface. The legs of those that wade are usually long and naked: swimming fowls have the toes webbed together like those of a goose, which, like oars, serve to drive them forward with greater velocity. The formation of land and water fowl is indeed as distinct as their habits; and nature seems to point out this obvious distribution in methodizing these feathered animals: but as the number of Birds already known amounts to above eight hundred, and new ones are daily adding to the catalogue, it is not sufficient that we are able to distinguish a land from a water fowl; we ought to be capable of distinguishing the different kinds of Birds from each other, and even the varieties in the same kind, when they are presented to our view.

All Birds are divided by Linnæus into six classes. 1. Those of the *rapacious kind*. 2. *The pie kind*. 3. *The poultry kind*. 4. *The sparrow kind*. 5. *The duck kind*, and 6. *The crane kind*. The various kinds of land Birds are comprehended in the first four, and those which belong to the water, in the two last.

Birds of the *rapacious kind* are such carnivorous fowl as live by rapine: they are distinguished by their beak, which is hooked, strong, and notched at the point; by their short muscular legs, their strong toes, and their sharp and crooked talons; by the strength of their body, and the impurity of their flesh; by the nature of their food; and by the cruelty and ferocity of their manners.

The beak of the *pie kind* is different from that of the rapacious kind, and in some degree resembles a wedge, being fitted for the purposes of cleaving. Their legs are short and strong, their body slender and impure, and their food miscellaneous. They nestle in trees, and the female is fed by the male during the time of incubation.

The bill of the *poultry kind* is a little convex, for the purposes of gathering their food. The upper part of the beak hangs over the lower, their bodies are fat and muscular, and their flesh white and pure. They live principally on grain, which is moistened in the crop. They make an artless nest on the ground, and lay a great number of eggs. They are strangers to connubial love, and, unlike the other classes of birds, are promiscuous in their amours.

All the beautiful and vocal class of Birds that adorn our fields and groves are comprehended under the *sparrow kind*. Their bills resemble forceps for catching hold of any thing: their legs are formed for hopping, their bodies are tender, and in such as feed upon grain are pure: but impure in such as feed upon insects. They live chiefly in trees, and many of them shew great knowledge of architecture in the structure of their nests: they display great fidelity in the connubial state.

In birds of the *duck kind*, the bill serves as a kind of strainer to their food; it is smooth, covered with skin, and nervous at the point. The legs of these Birds are short, and their feet formed for swimming, the toes being joined together by a web. They live in waters, and chiefly build their nests upon land.

Birds of the *crane kind* have the bill formed for the purposes of searching and examining the bottom of pools: their legs are long, their toes have no web between them, their thighs are half naked, their body slender and covered with a thin skin, their tail short, and their flesh savoury. They live



live in lakes, and chiefly build their nests upon the ground.

Such is the division of Linnæus with respect to Birds; but we have ventured to differ from him in several particulars, though, like him, we have divided the history of them into six classes; first giving the history of four or five birds that cannot well

be ranged systematically, viz. the ostrich, the cassowary, the emu, and the dodo. These, from their extraordinary magnitude, are sufficiently distinguishable from others, and, from their incapacity of flying, lead a different life from the rest of the feathered creation.

## C H A P. I.

*Containing the NATURAL HISTORY of the OSTRICH, the EMU, the CASSOWARY, the DODO, the EAGLE, the CONDOR, the VULTURE, the FALCON, the GOSHAWK, the KITE, the BUZZARD, the KESTRIL, the HOBBY, the SPARROW-HAWK, the MERLIN, the BUTCHER-BIRD, and the OWL.*

### NATURAL HISTORY of the OSTRICH.

THE Ostrich is the first of the feathered tribe that seems to unite in itself the class of quadrupeds and birds; for though it has the general outline and properties of a bird, it retains many of the marks of the quadruped. It resembles the camel in appearance, and is almost as tall; it is clothed with a plumage that more resembles hair than feathers, and its internal parts are as much like those of quadrupeds as of the bird creation. This animal, therefore, may be considered as filling up that chasm in nature which separates one class of beings from another.

Of all birds the Ostrich is the largest. Travellers assure us that they are sometimes found as tall as a man on horseback; and some of those which have been shewn in England, exceeded seven feet in height. The head and bill resemble those of a duck, the neck has some similitude to that of a swan, and the legs and thighs are like those of an hen; though the whole appearance bears a strong resemblance to that of a camel. But, to descend to particulars, this animal is usually seven feet high from the top of the head to the ground, and about four from the back to the ground: when the neck is stretched out in a right line, it measures six feet from the head to the rump, and the tail about a foot more. One of the wings is a foot and an half long without the feathers, and with the feathers, three feet. The plumage is generally black and white, though it is said to be sometimes grey: the largest feathers, which are at the extremities of the wings and tail, are usually white; the next row is black and white; and the small feathers on the back and belly are a mixture of black and white. This animal has no feathers on the sides of the thighs nor under the wings: that half of the neck which is next to the body, is covered with smaller feathers than those on the belly and back, and like them are a mixture of black and white.

These feathers are peculiar to the Ostrich: other birds have several sorts, some of which are soft and downy, and others hard and strong; but almost all the feathers of an Ostrich are as soft as down, and utterly unfit to serve it for flying, or to defend it against external injury. The webs on the feathers of other birds are broader on one side than on the other, but in those of the Ostrich the shaft is exactly in the middle. The head and the upper part of the neck of this animal are covered with very fine white shining hair, with small tufts in some places, consisting of about ten or twelve hairs, which grow from a single shaft about the thickness of a pin. At the end of each wing there is a kind of spur resembling the quill of a porcupine, which is of a horny substance, hollow, and about an inch long. There

are two of these on each wing, the largest of which is at the extremity of the bone of the wing, and the other about a foot lower. The neck appears proportionably more slender than that of other birds, from its not being covered all over with feathers.

The bill of the Ostrich is short and pointed; the external form of the eye resembles that of a man, the upper eye-lid being furnished with eye-lashes which are longer than those on the eye-lid below: the tongue is very short and small, and composed of cartilages, and ligaments, intermixed with fleshy fibres.

The thighs, which are large and plump, are covered with a flesh-coloured skin, which appears greatly wrinkled. Some of these animals have a few small scattered hairs on their thighs, and others are entirely without: the legs are covered with large scales, and the ends of the feet are cloven, having two very large toes on each, which are also covered with scales: the toes are of unequal sizes; that on the inside is the largest, and is about seven inches long, including the claw, which is three quarters of an inch in length, and nearly the same in breadth. The other two has no claws, and does not exceed four inches in length.

The internal parts of the Ostrich are peculiarly formed: at the upper part of the breast under the skin, the fat is two inches thick; and on the forepart of the belly it is two inches and an half thick in some places, and as hard as suet. It has two distinct stomachs, the lowermost of which somewhat resembles the crop in other birds, and is considerably larger than the other. The second stomach or gizzard, has externally the shape of a man's stomach, and when opened is always found full of variety of substances, such as beans, barley, hay, grass, stones, &c. some of which are as large as a pullet's egg. The kidneys, which are eight inches in length and two in breadth, differ from those of other birds in not being divided into lobes; and the heart and lungs are separated by a midriff, as in quadrupeds.

The Ostrich is a native of the Torrid Regions of Africa, and has long been celebrated by those who have mentioned the animals of that region. The flesh of this animal is proscribed in scripture as unfit to be eaten. It is described by most of the ancient writers, and consequently was well known in their times. It seems particularly formed to live among the sandy and burning deserts of the Torrid Zone, and it seldom migrates into tracts that are more mild or fertile. The Arabians assert that the Ostrich never drinks, and indeed the place of its habitation seems to confirm the assertion. In the most solitary and horrid deserts, where there are few vegetables to cloath the surface of the earth, and where the rain never comes to refresh it, Ostriches

are



are seen in large flocks, which to a distant beholder, appear like a regiment of cavalry. The most barren desert is capable of supplying these animals with provision, as they can eat almost any thing; and those dreary tracts are doubly grateful, as they afford both food and security.

Of all animals, the Ostrich is the most voracious: it will devour leather, grass, hair, stones, metals, or any thing that is given to it; but those substances which the coats of the stomach cannot soften, pass whole; so that glass, stones, or iron, are excluded in the same form in which they were devoured. All metals, indeed, which are swallowed by any animal, lose a part of their weight from the action of the juices of the stomach upon their surface. A quarter pistole, which was swallowed by a duck, lost seven grains of its weight in the gizzard before it was excluded; and it is probable that a greater diminution of weight would happen in the stomach of an Ostrich: considered in this light it may be said to digest iron, but not in that extensive sense which is propagated by vulgar error. Valisnieri found the first stomach of an Ostrich filled with a jumbled collection of brass, copper, iron, tin, lead, wood, stones, glass, cords, nuts and grass; and, among the rest, a piece of stone above a pound weight. It is probable that this animal is obliged to fill up the great capacity of its stomach in order to be at ease; and when nutritious substances are not to be obtained, it supplies the void with any thing that offers.

In their native deserts, these animals live chiefly upon vegetables, where they lead a social inoffensive life, the male assorting with the female with connubial fidelity. Their eggs are very large, some of them measuring above five inches in diameter, and weighing above fifteen pounds. The season for laying depends entirely upon the climate in which the animal is bred: in the north of Africa, this season is about the beginning of July; in the south, it is towards the latter end of December. These birds are very prolific, and usually lay from forty to fifty eggs at a clutch. The shells of these eggs are extremely hard, and it has been currently said that the female deposits them in the sand, to be hatched by the heat of the sun; but this opinion is erroneous; for Kolben, who has seen great numbers of them at the Cape of Good Hope, affirms that they sit on their eggs like other birds, and that the male and female take this office by turns, as he had frequent opportunities of observing. In those hot climates, indeed, there is less necessity for the continual incubation of the female, than in the more temperate zones; and she more frequently leaves her eggs, which are in no danger of being chilled by the weather: but though she deserts them by day, she always carefully broods over them by night. Some authors also inform us that Ostriches forsake their young as soon as they are excluded from the shell; but this is certainly a mistake; for Kolben assures us that the young ones are not able even to walk for several days after they are hatched; during which time the old ones are very assiduous in supplying them with grass, and defending them from danger. The young are of an ash-colour the first year, and are covered all over with feathers, but after some time they drop those feathers, and those parts which usually are covered, assume a different and more becoming plumage.

It is on account of the beauty of a part of the plumage of this harmless animal, particularly the long feathers of which the wings and tail are composed, that man has been so active in pursuing it to its deserts. Pliny assures us that in his time the caps and helmets of the soldiers were adorned with these plumes; the ladies of the East use them as an ornament in their dress, and the ladies of Great Britain have lately decorated their heads with the feathers

of this animal. They are also used by undertakers, who place them upon hearses, and the heads of the horses which draw them, when the nodding plumes add greatly to the solemnity of the funeral. Those feathers are the most valuable which are plucked from the animal when living; those which are taken after its death being dryer, lighter, and more subject to be worm-eaten.

The savage nations of Africa hunt these animals for their flesh as well as for their plumage; they consider it as a great dainty, and sometimes breed them tame that they may eat the young ones, of which the female is said to be the most delicate food. The ancient Romans had no aversion to the flesh of the Ostrich; Aspicius gives us a receipt for making sauce for it. Even among the Europeans to this day, the eggs of the Ostrich are said to be nourishing and well tasted, but they are too scarce to be often fed upon.

The Arabians train up their best and fleetest horses for the chase of the Ostrich. As soon as the hunter comes within sight of its prey, he advances with a gentle gallop, so as still to keep the bird in view, but not to terrify him from the plain into the mountains. The Ostrich is the swiftest of all known animals which make use of their legs in flight; therefore, when he observes himself pursued at a distance, he at first runs but gently, either from the insensibility of his danger, or supposing himself sure of escaping. In this situation there is a strong similitude between him and a man running at full speed: his wings, like two arms, keep working with a motion correspondent to that of his legs, and his speed, if properly employed, would soon take him out of the view of his pursuers; but instead of moving in a direct line, he takes his course in circles; while the hunters relieve each other, meet him at unexpected turns, and keep him wholly employed for two or three successive days. At length, finding all power of escape impossible, and exhausted with hunger and fatigue, he endeavours to hide himself from those enemies which he cannot avoid, by covering his head in the sand, or the first thicket he arrives at. Some of these animals venture to face their pursuers, and, though in general the most gentle animal in nature, when driven to desperation, will valiantly defend themselves with their beaks, wings, and feet; and so great is the force of their motion, that a man would be utterly unable to withstand them.

Sometimes, in order to take the Ostrich, a man covers himself with that animal's skin, and placing an arm through the neck of it, counterfeits all the motions of this creature. By this artifice they approach it, and it frequently becomes an easy prey. It is also sometimes taken by dogs and nets.

Whole flocks of Ostriches are bred by the inhabitants of Dara and Lybia, and are tamed without much trouble. But, in this domestic state, they are not only prized for their feathers and their flesh, but they are often ridden upon, and used as horses. Moore assures us that he saw a man travelling upon an Ostrich, at Joar; and Adamson asserts, that at the factory of Podore, he saw two young Ostriches, the strongest of which ran swifter than the best English racer, though he carried two negroes on his back.

It is however generally agreed, that the Ostrich is a very stupid bird, and soon forgetful of its young. As an instance of its stupidity, it hides its head in the reeds when pursued, thinking itself thus totally covered from the sight; and as another proof, we are told, that they who go in pursuit of them, draw the skin of an ostrich's neck on one hand, which is found a sufficient lure to take them with the other. It is spoken of in the scripture as the symbol of cruelty and forgetfulness. See Lament. iv. 3. Job



xxxix. 13, &c. which latter passage in Dr. Young's fine paraphrase, we here subjoin:

Who in the cruel Ostrich has subdu'd  
A parent's care, and fond inquietude?  
While far she flies, her scatter'd eggs are found,  
Without an owner on the sandy ground:  
Cast out on fortune, they at mercy lie,  
And borrow life from an indulgent sky:  
Adopted by the sun, in blaze of day  
They ripen under his prolific ray.  
Unmindful she, that some unhappy tread  
May crush her young in their neglected bed.  
What time she skims along the field with speed,  
She scorns the rider, and pursuing steed.

Upon this last line Dr. Young observes from Xenophon, that Cyrus had horses which could overtake the goat, and the wild ass, but none that could reach this creature; and that one thousand golden ducats, or an hundred camels, was the stated price of a horse that could keep equal pace with them. The ingenious Abbé la Pluche remarks, that in all countries where the Ostrich is known, when they would speak of a mother who has little care of her children, they always compare her to an Ostrich.

Modern travellers, however, have represented the Ostrich in a much less odious light as a parent, than the antient naturalists.

#### NATURAL HISTORY of the EMU.

**T**HIS bird, which is also called the American ostrich, is an inhabitant of the new continent; and travellers seem to have been more solicitous in proving its affinity to the ostrich, than in mentioning those peculiarities which distinguish it from all others of the feathered creation. It is chiefly found in Guiana, in the inland provinces of Brazil and Chili, and the vast forests bordering on the mouth of the river Plara.

The Emu is second in magnitude to the ostrich; it is by much the largest bird in the new continent, and usually measures six feet in height from the head to the ground. Its legs are about three feet long, and its thighs are almost as thick as those of a man: the toes are different from those of the ostrich, the American bird having three, and the other only two. In the length of its neck, the smallness of its head, and the flatness of its bill, it resembles the ostrich, but in other respects, it is more like the cassowary. The form of its body appears round, the wings are short, and very ill suited to flying, and it is entirely destitute of a tail. It is covered on the back and rump with longish feathers that fall backwards; those on the back being grey, and those on the belly white. It moves swiftly, and seems to be assisted in its motion by a kind of tubercle behind, like an heel: in its course it uses a very singular kind of action, lifting up one wing, which it keeps elevated for a time; when, letting that drop, it raises the other, and moves with such swiftness, that the fleetest dogs are thrown out in the pursuit.

The Emu is a bird but little known; travellers have therefore given a loose to their imaginations in describing it. Nierenberg's account is too extraordinary to be credited; and Wafer asserts that he has seen great quantities of this animal's eggs on the desert shores, north of the river Plata, where they are buried in the sand, to be hatched by the heat of the climate; but it is more probable that the eggs which Wafer had seen, were those of the crocodile, which are known to be hatched in this manner.

The young are familiar as soon as they are hatched, and follow the first person they see. Wafer asserts that he has been followed by many of them

when they were young, but as they grew older they became more cunning and distrustful. The flesh, especially of those which are young, is good for food. As these animals are by nature so familiar, they might easily be reared up tame, and might probably answer domestic purposes, like the turkey or the hen; especially as their maintenance could not be expensive; for, if the account of Narborough is to be relied on, they live entirely upon grass.

#### NATURAL HISTORY of the CASSOWARY.

**T**HE Cassowary, with regard to magnitude, is next to the emu: it appears indeed more bulky to the eye, its body being nearly equal, and its neck and legs much thicker and stronger in proportion. From the point of the bill to the extremity of the claws, it is about five feet and an half long, and the legs are about two feet and an half high. The largest toe, including the claw, is five inches long; and the claw alone of the least toe is three inches and an half long. The wing is so small as not to appear, being hid under the feathers of the back. The head, being without feathers, appears small, like that of an ostrich, having on the top a crest three inches high, like that of an helmet, and of an horny substance; but it does not cover the whole top, extending only from the middle of the crown to the bill. In most other birds, a part of the feathers serve for flight, and differ from those that serve merely for covering; but in the Cassowary, all the feathers are of the same kind, and outwardly of the same colour. They are generally double, having two long shafts which grow out of a short one that is fixed in the skin. The stem or shaft is flat, shining, black, and knotted below, with a beard proceeding from each knot: the beards at the end of the large feathers are perfectly black, and towards the root of a grey tawny colour, shorter, and like down, so that nothing appears except the ends, which are hard and black; the other part being entirely covered. The feathers on the head and neck are so short and thinly sown, that the bird's skin appears almost naked. The feathers on the rump are extremely thick, but in all other respects are like the rest, excepting their being longer. The wings, when stripped of their feathers, are only three inches long, adorned at the ends with five prickles, of different lengths and thickness, bending like a bow: the longest of these prickles is eleven inches, and it is a quarter of an inch in diameter at the root, being thicker there than towards the extremity.

The colour of the eye in this animal, which is a bright yellow, and the globe being above an inch and an half in diameter, added to the peculiar oddity of the natural armour on the head, give it an air equally fierce and extraordinary. The hole of the ear is very large and open, having only a few small black feathers spreading over it. The neck is of a violet colour, inclining to that of slate; with spots of red in several places behind. The skin which covers the fore part of the breast, on which the Cassowary leans and rests, is hard, callous, and without feathers.

The internal parts of this animal are very remarkable; it unites with the double stomach of animals that live upon vegetables, the short intestines of those which live upon flesh: the intestines of the Cassowary are not above a thirteenth part of the length of those of the ostrich. The heart is but an inch and an half long, and an inch broad at the base. It may be said upon the whole, that it has the head of a warrior, the eye of a lion, the defence of a porcupine, and the fleetness of a courser.

But,



# BIRDS.



EAGLE



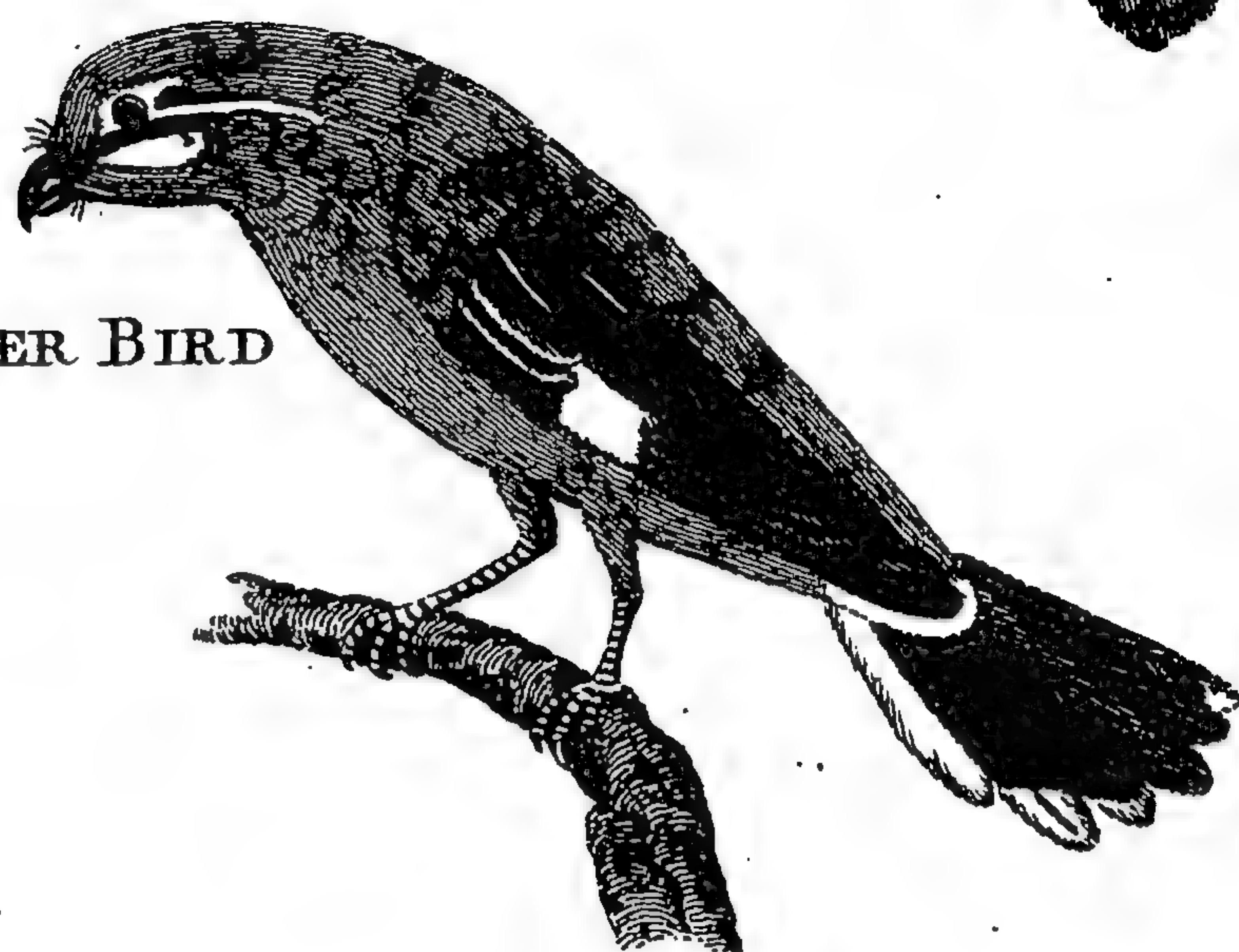
GUINEA HEN



FALCON GENTIL



CARACARA



BUTCHER BIRD



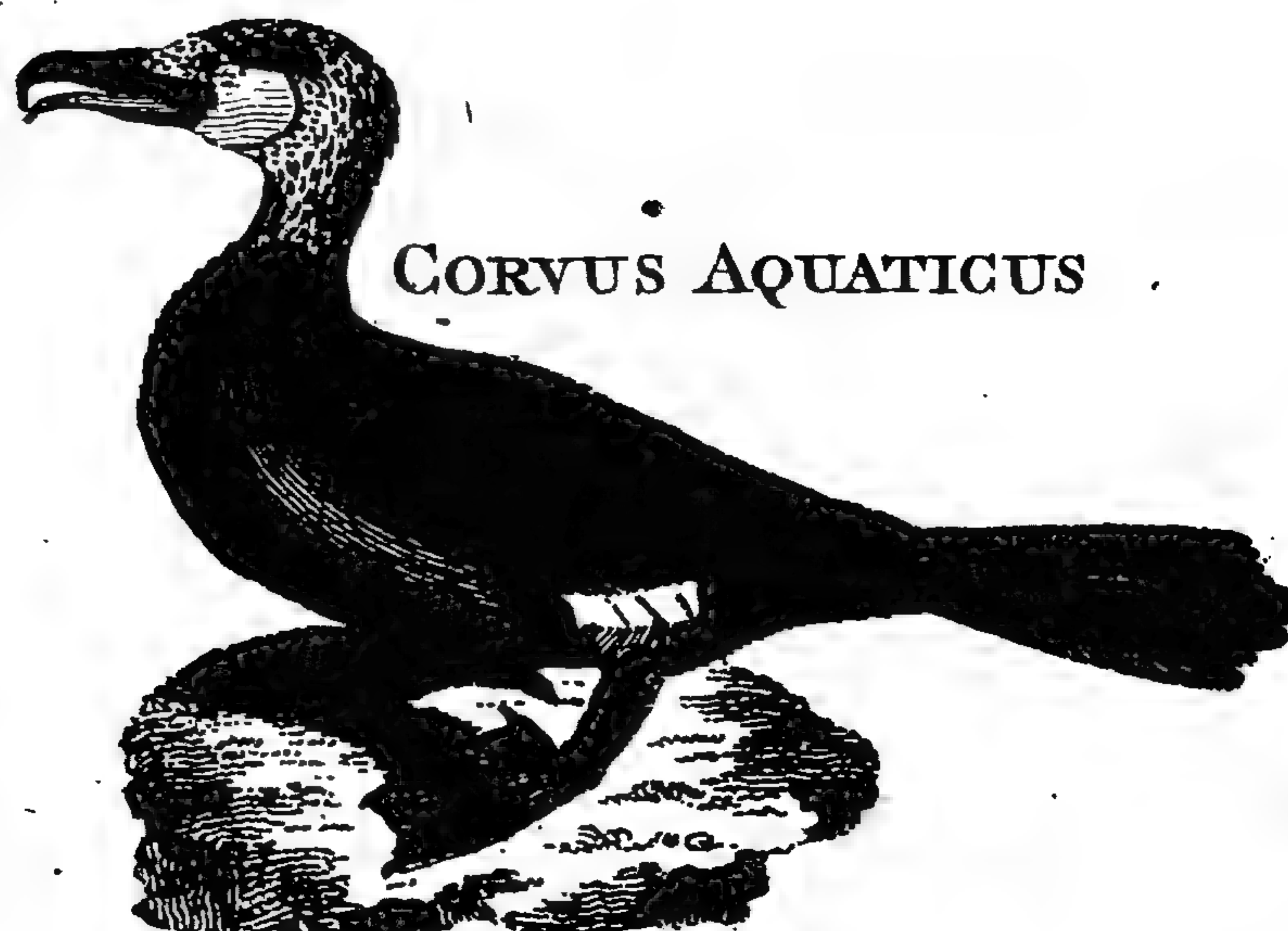
DODO



GRUS BALEARICA



CORACIAS



CORVUS AQUATICUS



But, notwithstanding the Cassowary is thus formed for a life of hostility, and for its own defence, it is a gentle inoffensive animal. It never attacks others, and when attacked itself, instead of the bill, it rather makes use of its legs, kicking like a horse, or running against its pursuer, and after beating him down, treading on him.

The manner of going of this animal is remarkably singular: instead of moving directly forward, it kicks up behind with one leg, and making a bound onward with the other, it travels with such velocity, that the swiftest racer would not be able to keep pace with him.

The Cassowary, like the ostrich, is extremely voracious, swallowing every thing that comes within the capacity of its gullet. The Dutch assert that it not only devours glass, iron, and stones, but even burning coals without testifying the smallest fear, or suffering the least injury.

The eggs of the Cassowary are of a grey ash-colour, inclining to green: they are neither so large nor so round as those of the ostrich. The largest are about fifteen inches round one way, and about twelve the other. The shell, which is not very thick, is marked with a number of little tubercles of a deep green.

The natural climate of this animal seems to be the southern parts of the most Eastern Indies. His domain appears to begin where that of the ostrich terminates. The latter has never been found beyond the Ganges; and the former is never seen nearer than the islands of Banda, Sumatra, Java, the Molucca islands, and the corresponding parts of the continent. Yet even here the Cassowary does not seem to have multiplied in any considerable degree, for a king of Java made a present of one of these birds to the captain of a Dutch ship, considering it as a great rarity. The ostrich, that is an inhabitant of the desert regions of Africa, continues numerous, and is still the unrivalled tenant of its own inhospitable climate. But the Cassowary, which inhabits a more peopled and polished region, becomes scarcer every day; for, in proportion as man multiplies, the savage and noxious animals fly before him. They desert their ancient habitations at his approach, and seek a more peaceable though barren retreat; voluntarily exchanging plenty for freedom, and encountering all the dangers of famine, to avoid the oppressions of man, who calls himself the lord of the creation.

#### NATURAL HISTORY of the D O D O.

**S**WIFTNESS is generally the attribute of birds, but the Dodo is not entitled to this distinction; on the contrary, its appearance strikes the imagination, as if it was a thing the most unwieldy and inactive of all nature. Its body is almost round, massive; and covered with grey feathers; it has two short thick clumsy legs resembling pillars, which seem to be but barely sufficient to support it. The neck is thick and purfy, and the head consists of two great chaps, that open beyond the eyes, and are large, black, and prominent; so that when the animal extends its chaps, it appears to be all mouth. The bill is extremely long, and thick, and of a bluish white, sharp at the end, and each chap crooked in opposite directions; so as to resemble two pointed spoons that are laid together by the backs. It has a stupid and voracious physiognomy, which is increased by a bordering of feathers round the root of the beak, that appear like a cowl or hood, and finish this picture of stupid deformity.

The bulk of this animal, instead of contributing to its strength, only adds to its inactivity. The ostrich, the cassowary, and the Dodo, are alike in-

capable of flying, but the two former supply that defect by their speed in running: the Dodo is scarce able to support its own weight, and moves forward with the utmost difficulty; it seems among birds what the sloth is among quadrupeds, equally incapable of defence or flight. It has wings, indeed, which are clothed with soft ash-coloured feathers, but they are too short to enable it to fly. It has a tail furnished with a few small curled feathers; but this tail is misplaced and disproportioned.

The Dodo is a native of the isle of France; and the Dutch, who first discovered it there, gave it the appellation of the nauseous bird, not only on account of its disgusting figure, but also from the disagreeable flavour of its flesh: but succeeding observers contradict this first report, and assert that its flesh is good and wholesome eating, and that three or four Dodos are sufficient to dine an hundred sailors. Some are of opinion that this is the same bird which travellers have described under the title of the bird of Nazareth, which description agrees with every particular, except that the feathers of the female of the bird of Nazareth are said to be extremely beautiful.

#### NATURAL HISTORY of the GOLDEN EAGLE.

**T**HIS is the largest and noblest of the Eagle kind; it weighs about twelve pounds, its length is three feet, and the extent of its wings is about seven feet, four inches: the bill, which is three inches long, is of a deep blue colour, and the eye of an hazel colour: the sight and sense of smelling are very acute. The head and neck are covered with narrow sharp-pointed feathers, and of a dark brown colour, edged with tawny; but, in very old birds, those on the crown of the head turn grey. The whole body is of a dark brown, and the feathers on the back are finely clouded with a deeper shade of the same: the wings, when not extended, reach to the end of the tail: the quill feathers are of a chocolate colour, and the shafts white: the tail is of a deep brown, irregularly barred and spotted with an obscure ash-colour, and generally white at the roots of the feathers: the legs are yellow, short, and very strong, being three inches in circumference, and feathered down to the very feet: the toes are covered with large scales, and armed with most formidable claws, the middle of which being two inches long.

This species is found in the mountainous parts of Ireland, where it breeds in the loftiest cliffs. It usually lays three or four eggs, though seldom more than two are prolific; Providence denying a large increase to rapacious birds, because they are noxious to mankind; but graciously permits an unlimited multiplication of such animals as are of service to him. This Eagle is sometimes seen in Caernarvonshire, and there are some few instances of their having bred upon Snowdon hills.

Eagles in general fix upon those places which are remotest from man, upon whose possessions they seldom make their depredations, choosing rather to follow the wild game in the forest, than to risque their safety to satisfy their hunger.

The Eagle may be considered among birds, as the lion among quadrupeds: they are both sovereigns over their fellows of the forest, and, equally magnanimous disdain all petty plunder, pursuing only such animals as are worthy the conquest: the Eagle also disdains to share the plunder of another bird, rejecting every kind of prey which he has not acquired by his own pursuits. However hungry he may be, he never submits to carrion; and, when satisfied, never returns to the same carcass, but leaves it for other animals less delicate than himself.

Like the lion, he keeps the desert to himself alone;



alone; it being equally extraordinary to see two pair of Eagles on the same mountain, as two lions in the same forest; and by keeping thus separate they find a more ample supply. These animals have a strong similitude in other respects; the eyes of both are sparkling, and nearly of the same colour; their claws are of the same form, and their cry equally loud and terrifying. Formed for war, they are enemies of all society, and are equally fierce, proud, and incapable of being tamed. Infinite art and patience are required to tame an Eagle; and even when taken young, and brought under by long assiduity, it is still but a dangerous domestic, and seldom is brought to have an attachment for its feeder.

Though at all times a formidable neighbour, the Eagle is still more so when bringing up its young. Both male and female at that time exert all their force and industry to supply their brood. Smith informs us, in his history of Kerry, that a poor man in that county got a comfortable subsistence for his family, during a summer of famine, by robbing the Eaglets of the food which the old ones brought in vast quantities: he protracted their attendance beyond the natural time, by clipping the wings of the young and retarding their flight. Had the countryman been surprized in this employment by the old Eagles, he might have woefully experienced their resentment. It is dangerous to leave infants in places where Eagles frequent, an instance being recorded in Scotland of two being carried off by them; but fortunately the theft was discovered in time, and the children restored unhurt out of the Eagle's nest to the affrighted parents.

In the same country a peasant resolved to rob the nest of an Eagle that had built in a small island in the lake of Killarney. He watched an opportunity, and, while the old ones were away, he stripped and swam to the island. After robbing the nest of its young, and fastening them in a string, he was preparing to swim back with them; but, while he was yet up to his chin in the water, the old Eagles returned, and missing their young, immediately attacked the plunderer, and, in spite of all his resistance, dispatched him with their beaks and talons. In order to extirpate these pernicious birds, there is a law in the Orkney islands, which obliges the master of every house in the parish where an Eagle is killed, to give the person who destroyed it a hen.

Of all animals the Eagle flies highest; and from thence the ancients have given them the epithet of the Bird of Heaven.

The Eagle has always been reckoned the king of birds; whether on account of the superiority of his strength, the terror which he inspires into so many other animals on whom he preys, his natural fierceness, or the rapidity and elevation of his flight. Bochart tells us, that this bird lives a century, and increases in bulk to his death. If this be true, we may easily credit the relation of Athenæus, who says, that Eagles were carried by way of ornament at the triumph of Ptolemy, whose wings were twenty cubits long.

The voracity of this bird is so great, that he ravages all the neighbouring places, which are scarce sufficient to furnish him with prey necessary for his support. Hence, as we have already observed, two eagles are not to be found in the same quarter. Aristotle and Pliny say, that the Eagles chase their young ones, not only out of the airies or nests, but even out of the country where they inhabit as soon as they are able to fly. They are not contented with the larger birds, as hens, geese, and cranes, but pursue rabbits, hares, lambs and kids, which they lift from the ground and carry off. Nay some tell us of their attacking even bulls. As the Eagle lives wholly on the flesh of such animals as he kills,

so he quenches his thirst with their blood, and never drinks water but when he is sick. It is said, that the swan is the only bird, which can resist him, and that frequently he does it with success. All the other birds are afraid of the Eagle to a sovereign degree; they quake and tremble at his cry; and even the dragon, when he hears him, takes refuge in his den. Nor are the fishes safe from his voracity: he perceives them even at the bottom as he skims over seas and lakes; plunges immediately down with the rapidity of an arrow, and drags them to the bank, where he devours them. This wonderful instinct is referred to Job xxxix. 27, &c.

Sharpness of sight is a quality of the Eagle, which sets him above all other birds: he seems even to be sensible of that advantage: and, to preserve it in his species, as soon as his young begin to have strength, he turns them towards the sun, and makes them fix their eyes upon it; if any one cannot bear the heat and force of the rays, he chases him from the nest, as if he judged him unworthy of his protection and assistance, but attaches himself to the rest with a remarkable affection, even to the exposing his own life to preserve them, and fighting obstinately against all who would take them from him: he is seen fluttering in various ways round his nest to teach them to fly. He takes them afterwards upon his back, in such a manner, that the fowler cannot hurt the young, without piercing through the body of the old one: quits them in the middle of his course in order to prove them; and if he perceives that they cannot as yet support themselves alone, and that they are in danger of falling, he darts himself below them with the greatest rapidity, and receives them between his wings. He is the only bird into which nature has instilled this kind of instinct; which the scripture has chosen as an expressive symbol of the tenderness with which God protected his people in the wilderness. "I bare you," says he, "on Eagles wings, and brought you unto myself:" Exod. xix. 4. So Deut. xxxii. 11: "As an Eagle stirreth up her nest, fluttereth over her young, spreadeth abroad her wings, taketh them, beareth them on her wings,—so the Lord, &c.

It is said that the reason why Eagles who have not the fibres of their eyes stronger than other animals can look stedfastly on the sun, and support its fiercest rays, is, because they have two eye-lids: one, with which they shut their eyes intirely: the other, which is thinner, they draw over them, when they look upon a luminous object, which renders the glaring light much more supportable. However this be, it is certain, that the Eagle rises to a prodigious height. To this instinct he owes the renewal of his strength and youth, in which the learned, and even the critics themselves are agreed; every ten years his feathers become heavy and less proper for flight: he then makes an effort and approaches nearer the sun than usual, and after being excessively heated, he plunges immediately into the sea: his feathers fall off, and new ones supply their place, which restore him to his pristine strength. When it moults, it is said to fall into a languishing condition, so as neither to be able to hunt after its prey as usual, nor to create terror in other birds.

Ælian attributes to the Eagle a peculiar instinct of gratitude. He says, that one, which Pyrrhus had brought up, and which followed him every where, was so sensible of that illustrious warrior, that he would not quit his body or take any nourishment. Another threw himself into the funeral-piles, where he saw them burning the corpse of him who had kept him till that moment.

The nest of the Eagle is usually built in the most inaccessible cliff of the rock, and generally sheltered from the weather by some jutting crag that hangs over it; but they are sometimes wholly exposed to the



the winds, as well sideways as above; for the nest is flat, though built with great labour.

Eagles, says Mr. Pennant, are equally remarkable for their longevity; and for their power of sustaining a long abstinence from food. One of these species, which, at the time of his writing his *British Zoology*, had been nine years in the possession of Mr. Owen Holland of Conway, lived thirty-two years with the gentleman who made him a present of it; but he knew not its age when the latter received it from Ireland. The other remark is verified in the same bird; for, through the neglect of servants, it endured hunger for twenty-one days, without any sustenance whatever.

Such are the general characteristics and habitudes of the Eagle; but in some these habitudes differ: the sea Eagle and the osprey, for example, live principally upon fish, and consequently build their nests on the sea-shore, and by the sides of rivers, on the ground among reeds. They catch their prey by darting down upon them from above; the Italians therefore call them *Aquila Piombina*, or the Leaden Eagle; comparing their violent descent on their prey, to the fall of lead into water.

#### The BALD EAGLE.

The body of the Bald Eagle is brown; the head, neck, and tail, white, and the upper part of the legs brown. It is an inhabitant of North-Carolina, and is remarkable for habits peculiar to itself. These Eagles breed in that country all the year round; and as soon as the young are just covered with down and a kind of white woolly feathers, the female Eagles lay again. These eggs are left to be hatched by the warmth of the young Eaglets that continue in the nest; the flight of one brood always making room for the next, that are but just hatched. These birds fly very heavily, and cannot overtake their prey like the rest of their tribe. These Eagles generally attend upon fowls in the winter; and, when any birds are wounded, they are sure to be seized by them, though they may escape the fowler. This animal will also frequently steal young pigs, and carry them alive to the nest, which is a filthy place, composed of twigs, sticks, and rubbish, and generally almost full of half-eaten bones, and putrid flesh.

#### The RING-TAIL EAGLE.

This bird is common to the northern parts of Europe and America. It is equal in size to the royal Eagle; the bill is of a blackish horn colour; the whole body of a dark brown, slightly tinged with rust colour; but its remarkable characteristic is the band of white on the upper-part of the tail, which distinguishes it in all countries where it is found. The legs are feathered to the feet, the toes yellow, and the claws black. It is also called the white tailed Eagle.

#### The SEA EAGLE.

This bird is found in several parts of Great-Britain and Ireland. Turner says it was too well known in England in his days, for it made horrible destruction among the fish; he adds, that fishermen anointed their baits with the fat of this bird, imagining that it had a peculiar alluring quality: they were so superstitious as to believe, that whenever the Sea Eagle hovered over a piece of water, the fish (as if charmed) would rise to the surface with their bellies upwards, and in that manner present themselves to them.

Though the Sea Eagle is no uncommon species, it seems at present to be little known, and has not been described by any writer since Clusius, except by Pennant in his *British Zoology*. It has generally been confounded with the golden Eagle, to which it bears some resemblance. The colours of the head,

neck, and body, are the same with the golden Eagle, but much lighter, the tawny part in this predominating: in size it is far superior: the bill is larger, more hooked, and more arched: underneath grow several short strong hairs or bristles, forming a sort of beard: some writers have therefore supposed it to be the *aquila barbata*, or bearded Eagle of Pliny. The interior sides, and the tips of the feathers of the tail, are of a deep brown: the exterior sides of some are of an iron colour, in others spotted with white: the legs are strong, thick, and of a yellow colour, and feathered but little below the knees; which is an invariable distinction between this and the golden Eagle: this nakedness of the legs, however, is of no small convenience to a bird that preys among the waters. The claws are of a deep and shining black, exceeding large and strong, and hooked into a perfect semi-circle. Writers all agree that this Eagle feeds principally on fish, which it seizes as they are swimming near the surface, by darting itself down upon them, but not by diving or swimming, as some authors have asserted, who for that purpose have invented them one webbed-foot to swim with, and another divided foot to take its prey with. Martin, speaking of these Eagles in the Western Isles, says, they fasten their talons in the back of the salmon, which are often on the surface, and sometimes above water.

#### The BLACK EAGLE.

The Black Eagle is about half the size of the golden Eagle; the body in general is blackish; the head and neck mixed with red. On the middle of the back, between the wings, there is a large white spot mixed with red feathers, which, approaching the rump, become entirely of a darkish red. The feathers on the wings resemble those of a common buzzard, except that there is a dark streak running cross the prime feathers; and one that is whitish, terminating in an ash-colour at the tip of the wings.

#### The OSPREY.

Though Mr. Ray places this bird among the hawks, yet from one of the species lately taken, it appears to be of the Eagle kind, and it was indiscriminately known by the name of the Osprey and the Eagle above one hundred and sixty years ago, as appears by Dr. Kay's description; it is therefore restored to the aquiline rank, under the name of the Osprey.

This bird frequents rivers, lakes, and the sea shores: it makes its nest among reeds, and lays three or four white eggs of an elliptical form, somewhat less than those of a hen. It principally feeds on fish, which it seizes in the same manner that the sea Eagle does; not by swimming, but by precipitating itself on them. Turner says it also preys on cootes and other water-fowl. The feet of the Osprey are formed like those of other birds of prey; though Linnæus, copying the errors of ancient writers, asserts that the left foot is palmated.

The bird which is here described was a female: it was twenty-three inches long, and weighed sixty-two ounces; the breadth was five feet four inches; the wings, when closed, reached beyond the end of the tail, which consists of twelve feathers, like all the tails of those of the hawk kind; the two middle feathers were dusky; the others barred alternately with brown and white on the inner webs: on the joint of the wing next the body was a spot of white; the quill feathers of the wings were black; the secondary feathers and the coverts dusky, the former having their interior webs varied with brown and white. The head was small and flattish; the crown white, marked with oblong dusky spots; the cheeks, chin, breast, and belly were white, except that the last was spotted with a dull yellow; a bar of brown extends



extends from the corner of each eye, along the sides of the neck, pointing towards the wing. The legs were very short, thick, and strong: their length being only two inches and a quarter, and their circumference two inches: their colour was a pale blue, the outward two turned easily backward; and, what claims our attention, the claw belonging to it is larger than that of the inner toe; in which particular it differs from every other bird of prey; but it seems peculiarly necessary to this kind, for the better securing its slippery prey.

#### The CROWNED EAGLE.

This curious kind of the Eagle species, is a native of Africa: the description here given, is taken from the ingenious and accurate Mr. Edwards, who thus describes the bird: "the Crowned Eagle is about a third part less than the larger sort of Eagles which we see in Europe, but appears to be strong and bold like them. The bill, and the skin which covers the upper mandible, (in which the nostrils are placed) are of a dusky brown colour: the corners of the mouth are cleft in pretty deep under the eyes, and are of a yellowish colour: the circles round the eyes are of a reddish orange colour: the fore-part of the head, the space between the eyes, and the throat are covered with white feathers, with small black spots: the hinder-part of the head and neck, the back and wings, are of a dark brown, or blackish colour, the outer edges of the feathers being of a lighter brown; the quills are darker than the other feathers of the wings; the ridge in the upper parts, and the tips of some of the lesser covert feathers of the wings are white: the tail is of a brown colour, barred across with black, and on its under-side appears of a dark and light ash-colour: the breast is of a reddish brown, with large transverse black spots on its sides; the belly and covert feathers under the tail are white spotted with black: the thighs and legs down to the feet are covered with white feathers, beautifully spotted with round black spots: the feet and claws are very strong; the feet are covered with scales of a bright orange colour; the claws are black. It raises the feathers on the hinder part of the head, in the form of a crest or crown, from which it takes its name."

Like the other birds of the same name and species, the Crowned Eagle is remarkable for its voracity, and sharpness of sight.

The other birds of the Eagle kind, where there are no remarkable peculiarities, are sufficiently described in the general account of the Eagle; we shall, however, give the distinct mark of every other bird of the Eagle species.

The Common Eagle is of a brown colour, the head and upper part of the neck inclining to red; the feathers of the tail are white, except that they grow blackish towards the ends: the four outer ones on each side are of an ash-colour, and the legs are clothed with feathers of a reddish brown.

The White Eagle is entirely white.

The Rough-footed Eagle is of a dirty brown, spotted with white on the legs and under the wings: the feathers of the tail are white at the beginning and the point; the feathers on the legs are of a dirty brown spotted with white.

The Erne is of a dirty iron colour above, and iron colour mixed with black below; the head and neck are ash-colour mixed with chestnut; the points of the wings blackish, the tail white, and the legs naked.

The Jean le Blanc is of a brownish grey above, and white, spotted with tawny brown below; the feathers on the outside, and at the extremity of the tail, are brown; on the inside they are white streaked with brown: the legs are naked.

The Brazilian Eagle is of a deep brown, with ash-

colour mixed in the wings; the tail white, and the legs naked.

The Oronoko Eagle has a topping, and is of a deep brown above; and white, spotted with black, below; the upper part of the neck is yellow; the feathers of the tail are brown, with white circles; the feathers of the legs are white, spotted with black.

The Eagle of Pondicherry is of a chestnut colour, except that the six outward tail feathers are half black.

#### NATURAL HISTORY of the CONDOR, or CONDOR of AMERICA.

NATURALISTS are in doubt whether to refer the Condour of America to the eagle tribe, or to that of the vulture. Its great strength, force, and vivacity, might plead for its place among the former; but the baldness of its head and neck might be thought to degrade it among the latter. It is evident, however, that if size and strength, combined with rapidity of flight and rapacity, deserve pre-eminence, no bird can be placed in competition with it. The Condour possesses, in an higher degree than the eagle, all the qualities that render it formidable, not only to the feathered kind, but to beasts, and even to mankind.

The goodness of the Creator is evidently discerned in that plentiful provision, which he hath made, of creatures beneficial to mankind: nor are the footsteps of his gracious wisdom less manifest, in the care which he hath taken to prevent the over-spreading increase of such as are pernicious and destructive. A more remarkable proof of which we cannot have, than in the wonderful bird before us; which, happily for mankind, is rare, and seldom found: for, was the increase of the species large, it would spread universal havock and devastation.

The Condor or Condour, is a native of South-America. Captain Strong, as Sir Hans Sloane informs us, in the Philosophical Transactions, No. 208, shot one of them on the coast of Chili, not far from Mocha, an island in the South-Sea. It was shot, sitting on a cliff, by the sea-side, and was sixteen feet from wing to wing extended. He gave Sir Hans one of the feathers, which is now in the British Museum, and is two feet four inches long; the quill part five inches three quarters long, and one inch and a half about in the largest part. It weighed then, says he, three drams, seventeen grains and a half, and is of a dark brown colour.

To this account Sir Hans Sloane adds the testimony of Garcilaso de la Vaga, who declares, "that several of the fowls have been killed by the Spaniards, and measured from end to end of their wings extended, fifteen or sixteen feet. Nature, he observes, to temper and allay their fierceness, hath denied them the talons, which are given to the eagle; their feet being tipped with claws like a hen: however, their beak is strong enough to tear off the hide, and rip up the bowels of an ox! Two of them will attempt a cow or a bull, and will devour him: and it hath often happened that one of them hath assaulted boys of ten or twelve years of age, and hath eaten them." The Spanish inhabitants, on the coast of Chili, told Capt. Strong, that they were ever in dread, lest this rapacious bird should prey upon their children. And it is said that the Americans hold out to it, as a lure, the figure of a child, made of a very glutinous clay; upon which it descends with excessive rapidity, and strikes its pounces into it so deep, that it cannot, after that, get away. Mr. Condamine has frequently seen them in several parts of the mountains of Quito and Peru, and has observed them hovering over a flock of sheep; and he thinks, that they



they would have attempted to carry one off, if it had not been for the shepherd. The Indians assert that they will carry off a deer, or a young calf in their talons, as eagles would an hare or a rabbit.

Garcilasio further adds, that their colour is a mixture of black and white; and the tail is like a magpie's: they have on the fore-part of their heads a comb, not pointed or toothed like that of a cock, but rather even, in the form of a razor. When they come to alight from the air, they make such a prodigious noise with their wings, as is enough to astonish or make a man deaf. Labat acquaints us, that those who have seen this animal, declare that the body is as large as that of a sheep, and that the flesh is tough, and as disagreeable as carrion. It never is seen in forests, on account of the extreme length of its wings, because it would not have room to fly: but it frequents the sea shores, and the banks of rivers, where it is likely to meet with prey.

What a blessing it is to mankind, that there are but few (enough to keep up the species, and not overcharge the world) of this monster in the feathered creation! and into what can we resolve this rarity of a species so pernicious, but into the wise and over-ruling care of that adorable Providence; which we are assured, by the mouth of unerring truth, extendeth his concern, not only to man, but to the meanest of the feathered tribe; "not a sparrow falleth to the ground without our heavenly Father!" they who, as weakly as wickedly, endeavour to attribute all things to chance and second causes, would do well to inform us, how it comes to pass, that the vast and destructive Condor is so seldom found, is so slow in increase; while the fowls of an useful and beneficent sort, multiply so amazingly, and so plentifully contribute to our support and delight? Why should the hen or the turkey, the duck or the partridge, lead forth such a numerous brood; while the lone terror of Peru sits desolate, with its single offspring, on the top of the rocks?

The balance of animals, preserved in the creation, is a manifest token of the divine Providence. "The whole surface of our globe, says an ingenious naturalist, can afford room and support only to such a number of all sorts of creatures: and if by their doubling, trebling, or any other multiplication of their kind, they should increase to double or treble that number, they must starve or devour one another. The keeping therefore the balance even is manifestly a work of the divine Wisdom and Providence. To which end the great Author of Being hath determined the life of all creatures to such a length; and their increase to such a number, proportional to their use in the world. The life of some creatures is long, and their increase but small; and by that means they do not overstock the world. And the same benefit is effected where the increase is great, by the brevity of such creatures lives, by their great use, and the frequent occasions there are of them for food to man or other animals. It is a very remarkable act of the divine Providence, that useful creatures are produced in great plenty, and others in less. The prodigious and frequent increase of insects, both in and out of the waters for the supply of the fish, birds, &c. may exemplify the one; and it is observable in the other, that creatures, less useful, or by their voracity pernicious, have commonly fewer young, or seldomer bring forth; of which many instances may be given in the voracious beasts and animals; but the Condor of Peru is a particular and very sufficient instance.

P. Feuillée, the only traveller who has accurately described this bird, gives us the following circumstantial account. "In the valley of Ilo in Peru, I discovered a Condor, perched on a high rock before me: I approached within gun-shot and fired; but as my piece was only charged with swan shot,

the lead was not able sufficiently to pierce the bird's feathers. I perceived, however, by its manner of flying, that it was wounded; and it was with a great deal of difficulty that it flew to another rock, about five hundred yards distant on the sea shore. I therefore charged again with ball, and hit the bird under the throat, which made it mine. I accordingly ran up to seize it; but even in death it was terrible, and defended itself upon its back, with its claws extended against me, so that I scarce knew how to lay hold of it. Had it not been mortally wounded, I should have found it no easy matter to take it; but I at last dragged it down the rock, and, with the assistance of one of the seamen, I carried it to my tent to make a coloured drawing.

"The wings of this bird, which I measured very exactly, were twelve feet three inches (English) from tip to tip. The great feathers, which were of a beautiful shining black, were two feet four inches long. The thickness of the beak was proportionable to the rest of the body, the length about four inches; the point hooked downwards, and was white at its extremity, and the other part was of a jet black. A short down, of a brown colour, covered the head; the eyes were black, and surrounded with a circle of reddish brown. The feathers on the breast, neck, and wings, were of a light brown; those on the back were rather darker. Its thighs were covered with brown feathers to the knee. The thigh bone was ten inches long; the leg five inches: the toes were three before, and one behind: that behind was an inch and an half; and the claw with which it was armed was black, and three quarters of an inch long; the other claws were in the same proportion; and the leg was covered with black scales, as also the toes; but in these the scales were larger.

"These birds usually keep in the mountains, where they find their prey: they never descend to the sea-shore but in the rainy season; for, as they are very sensible of cold, they go there for greater warmth. Though these mountains are situated in the Torrid Zone, the cold is often very severe: for a great part of the year they are covered with snow, but particularly in winter.

"The little nourishment which these birds find on the sea-coast, except when the tempest drives in some great fish, obliges the Condor to continue there but a short time. They usually come to the coast at the approach of evening; stay there all night, and fly back in the morning."

Some are of opinion that the Condor is not confined to America only: the great bird called the rock, described by Arabian writers, and so much exaggerated in fable, is supposed to be a species of the Condor. The great bird of Tarnassar in the East Indies, and the vulture of Senegal, which carries off children, are probably no other than the bird we have been describing. However this be, we are not to regret that it is hardly ever seen in Europe, as it appears to be one of the most formidable enemies of mankind. They chiefly inhabit the deserts of Pachomac, where men seldom venture to travel. Those wild regions are alone sufficient to inspire a secret horror; the forests are vocal with the roaring of wild beasts, the hissing of serpents, and the mountains are rendered terrible by the Condor.

Happy Britain, as in a thousand other particulars, so in the peculiar favour of heaven on thy climate; which no pernicious or rapacious animals inhabit; through which never stalks, furious with hunger, the devouring tyger; over which never hangs, threatening devastation, the voracious and unwieldy Condor! Happy Britain, whose fields smile with plenty; and over whose plains roves fair Freedom, unmolested, and blest to her wish.



## NATURAL HISTORY of the VULTURE.

**I**N the description of birds, the first rank has been usually given to the eagle; not because it is stronger or larger than the Vulture, but because it is more generous and bold. The eagle, unless pressed by famine, will not accept of carrion; nor will he ever devour what he has not earned by his own pursuit. The Vulture, on the contrary, is indelicately voracious, and seldom attacks living animals, when it can be supplied with the dead. Putrefaction and stench, instead of deterring, only serve to allure him. The Vulture among birds is what the jackall and hyæna are among quadrupeds, who prey upon carcases, and disinter the dead.

Vultures are easily distinguished from all those of the eagle kind, by the nakedness of their heads and necks, which have no other covering, than a very slight down or a few scattered hairs. Their eyes are more prominent; those of the eagle being buried more in the socket. Their claws are also shorter and less hooked. They are different from all other birds of prey, in having the inside of the wing covered with a thick down. Their attitude is less upright than that of the eagle, and their flight more difficult and heavy.

They are also strongly marked by their nature, which, as we have already observed, is cruel, indolent, and unclean. Their sense of smelling is amazingly great, nature having supplied them with two large apertures or nostrils without, and an extensive olfactory membrane within. Their intestines are formed differently from those of the eagle kind; for they partake more of the formation of such birds as live upon grain.

The Vulture, which is common in many parts of Europe, and but too well known on the western continent, is an absolute stranger in England. In Arabia, Egypt, and many other kingdoms of Africa and Asia, Vultures are very numerous. The down on the inside of their wings is converted into a very warm and comfortable kind of fur, and is frequently exposed to sale in the Asiatic markets.

In Egypt the Vulture is of singular service. In the neighbourhood of Grand Cairo, there are large flocks of them, which no person is permitted to destroy: they devour all the carrion and filth of that great city, which might otherwise tend to corrupt and putrefy the air. They accompany the wild dogs of that country, and frequently feed with them very deliberately upon a dead carcase. As both are extremely voracious, and both lean and bony to a very great degree, it is remarkable that this odd association produces no quarrels; but these birds and quadrupeds seem to live amicably, and nothing but harmony subsists between them.

In America, where the hunters pursue beasts only for their skins, these birds are seen to attend. They keep hovering at a little distance; and, when the beast is dead and abandoned, they call out to each other, run eagerly to the carcase, and, in a very short time, pick all the flesh from the bones.

Catesby informs us that they are attracted by carrion at a very great distance. "It is pleasant," says he, "to behold them when they are eating, and disputing for their prey. An eagle generally presides at their entertainments, and makes them all keep their distance till he has done. They then fall to with an excellent appetite: and their sense of smell is so exquisite, that the instant a carcase drops, we may see the Vultures floating in the air from all quarters, and come fousing on their prey." Some have imagined that they eat nothing which has life; but this is only when they are unable to overcome their prey; for when they discover lambs, they shew no mercy; and serpents are their ordinary food.

In the Brasils, where Vultures are found in great abundance, when they find a carcase which they have liberty to tear at their ease, they eat so voraciously that they are unable to fly. At all times, indeed, they are birds of a slow flight, and cannot raise themselves from the ground; but, when they are over-fed, they are entirely helpless: however, if they are pursued, they soon get rid of their burthen; for they can at any time vomit up what they have eaten, and then they fly off with greater facility.

It is entertaining to observe the hostilities between noxious animals. Of all creatures, the two most at enmity are the Vulture of Brasil and the crocodile. The female of the latter, which in the rivers of that part of the world grows to the size of twenty-seven feet, lays from one to two hundred eggs in the sands, on the side of the river, where they are hatched by the heat of the climate. The crocodile takes every precaution to hide from all other animals the place where she deposits her burthen; but an assembly of Vultures sit silent and unseen in the branches of some neighbouring forest, and observe the operations of the crocodile, with the pleasing expectations of succeeding plunder. They patiently wait till she has laid the whole number of her eggs, covered them in the sand, and retired to a convenient distance: then all together, they pour down upon the nest, uncover the eggs, and devour the whole brood without remorse.

Men, who have been pressed by hunger, have been tempted to taste the flesh of the Vulture; but it is lean, stringy, nauseous, and unsavoury: it smells and tastes of the carrion by which it was nourished, and sends forth a stench that is insupportable. These birds usually lay two eggs at a time, and produce but once a year. They make their nests in inaccessible cliffs, and in places so remote that they are seldom found. Those in Europe principally reside in the places where they breed, seldom venturing in the plains, except when the snow and ice, in their native retreats, have banished all living animals but themselves; then they brave the perils they must encounter in a more cultivated region.

In this tribe we may range the golden Vulture, the ash-coloured Vulture, and the brown Vulture; which are all inhabitants of Europe; the spotted, and the black Vulture of Egypt; the bearded Vulture; the Brazilian Vulture; and the king of the Vultures in South-America. They are all equally indolent, filthy, and rapacious, and perfectly agree in their nature.

## The GOLDEN VULTURE.

The Golden Vulture, in many particulars, resembles the golden eagle, but is larger in every proportion. It is four feet and a half in length, from the end of the beak to that of the tail, and to the end of the claws forty-five inches. The length of the upper chap is about seven inches, and the tail twenty-seven inches: the lower part of the neck, breast, and belly, are red. The feathers on the back are of a black colour; and on the wings and tail of a yellowish brown. Others of the kind differ from this in colour and dimensions; but they are all strongly marked by their naked heads, and a beak straight in the beginning, but hooked at the point.

## The KING of the VULTURES.

The King of the Vultures is a native of America, and is somewhat larger than a Turkey-cock. It is chiefly remarkable for the odd formation of the skin of the head and neck, which is bare: the skin, which is of an orange colour, arises from the base of the bill, and extends on each side to the head; from whence it proceeds like an indented comb, and falls on either side, according to the motion of the head. A scarlet coloured skin surrounds the eyes, and the iris



iris has the colour and lustre of pearl. The head and neck are destitute of feathers, having a flesh-coloured skin on the upper part, a fine scarlet behind the head, and a duskier coloured skin before: farther down behind the head, arises a tuft of black down, from whence issues a wrinkled skin, which extends beneath the throat on each side, which is of a brownish colour, mixed with blue and reddish behind: below, upon the naked part of the neck, a collar is formed of soft longish feathers of a deep ash-colour, which surround the neck, and cover the breast before. The bird sometimes withdraws its whole neck, and frequently a part of its head, into this collar, and appears to view as if it had withdrawn the neck into the body. It is sufficiently distinguished by these marks from all others of the Vulture kind; and it cannot be denied that the king of the Vultures is the most beautiful of all this deformed family; but neither its habits nor instincts vary from the rest of the cowardly, indolent, and filthy tribe.

The Vulture was consecrated to Mars and Juno; perhaps on account of the evils which these two deities did to mankind. It was also one of those birds, whose flight and cries were observed with the most exactness in augury.

#### THE BEARDED VULTURE.

The Bearded Vulture is about the size of an eagle; and from the tip of the bill to the end of the tail, measures about three feet four inches. The breadth, when the wings are extended, is seven feet six inches, and the prime quills are upwards of twenty-three inches in length. The bill is of a flesh colour inclining to purple, darkest towards the point, and about four inches in length. From the root of the lower chap hangs a remarkable tuft of black feathers; and the inside of the mouth is blue. The eyes are placed just above where the mouth extends, each eye being encircled with a brightish yellow. The sides and fore-part of the head is black; the nostrils are covered with stiff black feathers, and there is a blackish line from each corner of the mouth, which tends a little downwards, in the form of whiskers. The rest of the head, and the whole of the neck are covered with white feathers, which are short on the head, but long, loose, and pointed on the neck, like those of a cock. The upper side of the neck, the back, wings, and tail are of a dark brown colour, and the lesser covert feathers of the wings have dashes of a bright reddish brown along the shafts, but very narrow. The bottoms of all the feathers are white, and there is also a very thick, soft, white down all over the body under the feathers; the under side of the breast, belly, thighs, and coverts under the tail are white, tinged with a reddish brown; and the legs are covered with short, white downy feathers. The feet are of a lead colour, the claws dusky, and the middle and exterior toes on each foot are joined by a strong skin. The Vulture here described was brought from Santa Cruz, on the coast of Barbary.

#### THE BRASILIAN VULTURE.

This bird is also called the Mexican Vulture, it being found in that country as well as in Brasil. Macgrave says it is about the size of a kite; but, according to Mr. Ray, its bulk is equal to that of a raven. It has a long tail, but the wings are of a moderate length, and the whole plumage of the body is black. The head is small, and covered with a wrinkled skin of various colours; being yellow on the left side below the eye, and blue above, as well as on the top of the head. The remaining part is reddish. The beak is pretty long, very crooked, and covered half-way with a saffron-coloured skin. In the middle of the upper part of the beak there is a wide nostril, with only one hole, and placed cross-

wise. The extreme part of the beak is white, and without any skin, and the eyes resemble the colour of a ruby, with a round black pupil. Labat calls these birds a kind of turkey-cocks, which feed wholly upon carrion, and never touch fruit, corn, or herbage.

The brown, the spotted, and the black Vulture of Egypt agree with the general description of the Vulture, and are distinguished only by their colour.

#### NATURAL HISTORY of the FALCON.

FALCONRY is now given over in this kingdom, though it was the principal amusement of our ancestors. A person of rank scarce ever appeared without his hawk in his hand; which in old paintings is the criterion of nobility. Harold, who was afterwards king of England, when he went on a most important embassy into Normandy, is painted embarking with a bird on his fist, and a dog under his arm; and in an ancient picture of Henry VI. a nobleman is represented in the same manner. In those days it was thought sufficient for the sons of noblemen to wind the horn, and to carry their hawk with a grace; study and learning being then confined to the children of meaner people. That hawking was the accomplishment of the times, appears by Spencer, who makes Sir Tristram boast, in book vi. canto 2. that

Ne is there hawke which mantleth her on perch,  
Whether high trowing, or accoasting low,  
But I the measure of her flight doe search,  
And all her pray, and all her diet know.

The expence which attended this sport was incredible: among the Welch princes, the king's falconer was the fourth officer in the state; but, notwithstanding his honourable appointment, he was permitted to take no more than three draughts of beer from his horn, lest he should get intoxicated and neglect his duty. In the reign of James the first, Sir Thomas Monson gave a thousand pounds for a cast of hawks. It is not therefore surprizing that the laws were formerly so extremely rigorous to preserve a pleasure that was carried to such an extravagant pitch. By statute of King Edward III. it was made felony to steal a hawk; and to take its eggs, even in a person's own ground, was punishable with imprisonment for a year and a day, together with a fine at the king's pleasure. In the reign of Elizabeth, the imprisonment was reduced to three months; but the offender was to suffer imprisonment till he found security for his good behaviour for seven years. This diversion was in such high esteem, not only in England, but among the great all over Europe, that Frederic, one of the Emperors of Germany, thought it no indignity to write a treatise upon hawking. The art of gunning indeed was but little practised in the earlier times, therefore the hawk was valuable, as well for its affording diversion, as for its supplying the delicacies of the table, that could not otherwise be obtained.

The generous race of hawks which have been taken into the service of man, are distinguished from the rest by the peculiar length of their wings, which reach almost as low as the tail. In these, the first quill of the wing is almost as long as the second; it terminates in a point, which begins to diminish from about an inch of its extremity. The generous breed are thus distinguished from that of the baser race of kites, sparrow-hawks, and buzzards, whose tails are longer than their wings, and in which the first feather of the wing is rounded at the extremity. In the generous race the second feather of the wing is the longest, but among the kites, spar-

row-



row-hawks, and buzzards, the fourth feather of the wing is the longest.

The generous race are endowed with natural powers, of which the other kinds are destitute. From the length of their wings, they are swifter to pursue their game; from a confidence in their swiftness, they are bolder to attack it; and, from an innate generosity, they have an attachment to their feeder, and consequently are more docile and tractable than birds of a baser kind.

The hawk may be taught to fly at any game whatsoever; but falconers have generally confined their pursuit to such animals only as yield them profit in the capture, or pleasure in the pursuit. The hare, the partridge, and the quail, repay the trouble of taking them; but the Falcon's pursuit of the heron, the kite, or the woodlark, affords the most agreeable diversion; when they see themselves threatened by the approach of the hawk, they immediately take to the skies, instead of flying directly forward, as most other birds do. They fly almost perpendicularly upward, while their eager pursuer endeavours to rise above them: they both gradually diminish from the gazing spectator below, till they are totally lost in the clouds; but they descend shortly after, and are seen struggling together, the one using every effort of rapacious attack, and the other desperately defending itself. A period is presently put to the unequal combat; the Falcon comes off victorious, and the other, killed or disabled, becomes the prey of either the bird or the sportsman.

Other birds generally fly strait forward, by which the sportsman loses sight of the chase, and is in danger of losing his Falcon also, therefore they are not much pursued. The pursuit of the lark by a couple of merlins, is considered as excellent diversion: one of them soars above the lark, while the other, lying low for the best advantage, waits the success of its companion's labours: thus, while the one stoops to strike its prey, the other seizes it as it descends.

The Norwegian breed of hawks was anciently in high esteem with our countrymen: they were thought bribes worthy a king. Jeffry Fitzpierre gave two good Norway hawks to king John, to obtain for his friend the liberty of exporting one hundred weight of cheese; and John, the son of Ordgar, fined to Richard I. in one Norway hawk, to gain the royal interest in a certain affair.

#### The GYR FALCON.

This elegant species exceeds all other Falcons in size, and approaches nearly to the magnitude of an eagle. The bill is yellow, and very much hooked; the throat is of a pure white; and the whole plumage is of the same colour, except that it is marked with dusky lines, spots, or bars. On the head, breast, and belly, there are narrow dusky lines, thinly scattered, and pointing downward: the feathers of the back and wings are marked with black spots, in the shape of an heart, and the middle feathers of the tail with a few bars. The thighs are clothed with long feathers of a pure white. The legs are yellow, and feathered a little below the knees. This Falcon is sometimes found entirely white: when falconry was in fashion, it was used for the noblest game, such as cranes and herons.

#### The PEREGRINE FALCON.

The size of this bird is equal to that of the moor-buzzard; the bill is strong, short, and very much hooked; blue at the base, and black at the point. The feathers on the forehead are whitish; the crown of the head is black intermixed with blue, and the hind part of the neck black; the back, scapulars, and coverts of the wings are elegantly barred with deep black and blue. The quill feathers are dusky,

marked with elliptical white spots placed transverse; the tail is barred with several strokes of dusky and blue: the throat is white; the fore-parts of the neck and upper-part of the breast white, tinged with yellow. The rest of the breast, belly, and thighs, is white inclining to grey, and crossed with dusky strokes pointed in the middle. The feathers of the tail are of an equal length, beautifully barred with blue and black. This species was shot in Northamptonshire.

Signior Loranzi, in describing the male Peregrine Falcon, has made all his colours darker, and the head and upper part of the body almost black; but the fore part of the neck, the breast, and the belly, agree with the description above. It is probable, however, that the bird here described is the female Peregrine Falcon.

#### The SACRE.

This is the largest of the Falcon kind, except the gyr Falcon. It has a large head, a short blue beak, and a body longer in proportion than the rest of the tribe. The head is grey; the crown flattish, the eyes large and black, the nostrils small, the back and breast spotted with brown. The inside of the thighs are white, spotted with black. The feet and legs are generally blue, though sometimes they are whitish spotted with yellow, and their backs are ash-coloured with a reddish cast.

#### The MOUNTAIN FALCON.

This bird is about the size of the goshawk, but thicker in the body. It has a round head, except on the top, where it is a little flattish, and covered with ash-coloured feathers mixed with black. The beak is strong, short, and crooked; at the upper end of which are a great many fine slender feathers, resembling hairs. The throat and part of the breast are spotted with ash-colour. The body is usually of a brown dappled colour, like rusty iron, but sometimes it is blackish, with small strokes of white. The thighs are clothed with long black feathers, and the feet are nearly of the same colour. It is a very rapacious and untractable bird.

#### The GREY FALCON.

The grey Falcon is about the size of a raven: the bill, which is of a bluish colour, is short, strong and very hooked: the head is small and flat at the top, the fore-part of a deep brown, and the hind-part white. The sides of the head and throat are cream-coloured; the belly white, with oblong black spots; the hind part of the neck, and the back are of a deep grey. The wings are very long, and, when closed, reach beyond the tail. The first quill feathers are black, with a white tip, the others of a bluish grey, and their inner webs irregularly spotted with white. The tail is long, and resembles a wedge in shape: the two middle feathers are the longest, and plain, the rest are spotted: the legs are naked, long, and yellow.

#### The FALCON GENTLE.

It is necessary to be observed, that great caution ought to be used in describing the hawk kind, no birds being so liable to change their colours the two or three first years of their lives. Inattention to this has caused the number of hawks to be multiplied far beyond the reality: the marks to be attended to in order to form the characters of the species, are those on the quill feathers and the tail, which never change. Writers on falconry have given different names to the same kinds in different periods of their lives, which naturalists have adopted, and described as distinct kinds: even Mr. Ray has been so far misled as to copy them. Though the Falcon, the Falcon Gentle, and the haggard, are made distinct species,



cies, they, in reality, form but one. This point is effectually cleared up by a French author, who wrote in the beginning of the last century: speaking of the Falcon, he say, "S'il est prins en Juin, Juillet, et Aoust, vous le nommerez gentil: si en Septembre, Octobre, Novembre ou Decembre, vous le nommerez Pellerin ou Passager: s'il est prins en Janvier, Fevrier et Mars, il sera nommé Autenere; et apres estre muë une fois et avoir changé son cerceau, non auparavant, vous le direz Hagar, mot Hebrieu, qui signifie estranger." That is, "If it is taken in June, July, or August, it is called The Gentle: if in September, October, November, or December, it receives the appellation of the Pilgrim or Passenger: if it is taken in January, February, or March it is named Autenere: and, after having once moulted, it is called Hagar, a Hebrew word which signifies stranger."

The Falcon gentle is smaller than the peregrine Falcon, with a smaller and a rounder head, and a shorter back, but exactly resembles it in shape. The head is flattish on the top. It has fine large black eyes, encircled with fine yellow rings. The upper-part, and the sides of the head, are of a dusky brown, spotted with a fine black. The neck is surrounded with a light yellow ring, not unlike a collar, and a black line on each side extends from the corner of the mouth to the middle of the throat. The breast, thighs, and belly, are of a fine yellow colour, with small black streaks pointing downwards. The wings, back, and upper-side of the tail are of a dusky black, and, when closed, reach almost to the end of the tail.

As it evidently appears, from the authority above quoted, supported by the opinion of Mr. Pennant, that the common Falcon, the Falcon gentle, and the Haggard, are one and the same bird, we shall not trouble our readers with unnecessary repetitions, which would only tend to confuse them.

#### The WHITE FALCON.

This bird is of a pure white all over the body, except a few faint yellowish spots, which cannot be distinguished without a close examination. The wings indeed are perfectly white, without any of those yellow spots. This colour is sufficient to distinguish it from all other birds of the same kind.

#### The TUNIS, or BARBARY FALCON.

This is a sprightly majestic bird, with a large black beak, and open yellow nostrils. The eyes are of a dark hazel-colour, encircled with yellow rings. The top of the head is of a pale ash-colour, beautifully spotted with black; and the feathers on the back, shoulders, and part of the wings, are nearly of the same colour, and equally ornamented with black spots. The breast, belly, and thighs are yellowish inclining to white; the upper-part of the breast being a little shaded with blue. The wings are very long, reaching, when closed, almost to the end of the tail, which is of a bluish colour, with six or seven dusky coloured streaks running across it. Part of the thighs and the lower part of the belly, are marked with curious long red spots, resembling ermine.

#### The LANNER.

This species breeds in Ireland: the bird here described was caught in a decoy in Lincolnshire, pursuing some wild ducks under the nets. Mr. Pennant received the description of it from Taylor White, Esq. It is smaller than a buzzard; the crown of the head is of a brown and yellow clay colour: above each eye, to the hind part of the head, passes a broad white line: and beneath each, a black mark pointing down: the throat is white; the breast tinged with dull yellow, and marked with brown

spots pointing downwards; and the thighs and vent are spotted in the same manner: the back and coverts of the wings are of a deep brown, but lighter towards the edges. The quill feathers are dusky; the inner webs marked with oval rust-coloured spots, and the tail is spotted like the wings. The legs, which are of a bluish cast, are short and strong, which according to Mr. Willoughby, are the characters of the Lanner.

#### NATURAL HISTORY of the GOSHAWK.

THIS bird is larger than the common buzzard, and of a longer and more elegant form: the bill is blue towards the base, and black at the tip; the skin at the base of the bill is of a yellowish green: over each eye is a long white line, and on each side of the neck a bed of broken white. The head, the hind part of the neck, the back, and wings are of a deep brown colour: the breast and belly are white, beautifully marked with numerous transverse bars of black and white: the tail is long, and of a brownish ash-colour, marked with four or five dusky bars placed remote from each other. Mr. Willoughby distinguishes this species and the sparrow-hawk by the name of short-winged hawks, because their wings, when closed, do not reach so far as the end of the tail. The Goshawk was much esteemed among falconers, and taught principally to pursue cranes, geese, pheasants, and partridges.

#### NATURAL HISTORY of the KITE.

THE Kite may be distinguished from all the rest of this tribe, by his forked tail, and his slow floating motion, being almost for ever on the wing. He appears to rest himself upon the bosom of the air, and not to make the smallest effort in flying. Pliny supposes the invention of the rudder arose from the observation men made of the various motions of the tail, when the Kite was steering through the air: it is certain indeed that the most useful arts were originally copied from animals, however we may have improved upon them. Among the Samoids, the Esquimaux, and those nations which are in a state of nature, their buildings are inferior to those of the beavers; such hardy human beings being only capable of making very imperfect copies of them.

The Kite lives chiefly upon accidental carnage, as almost every bird in the air is able to escape him. He may therefore be considered as an insidious thief who only prowls about, and, when he perceives a small bird wounded, or a young chicken that has strayed too far from its mother, instantly seizes the hour of calamity, and, like a famished glutton, destroys it without mercy. His hunger indeed sometimes urges him to seeming acts of desperation. A Kite is frequently seen flying round and round for some time to mark a clutch of chickens, and then on a sudden, to dart like lightning upon the little unresisting animal, and carry it off, while the hen laments, and the boys cast stones in vain, to scare it from its plunder.

This bird usually breeds in large forests or woody mountainous countries: it lays two, and sometimes three eggs; which like those of all other birds of prey, are rounder and blunter at the smaller end than those of other birds. They are white, with dirty yellow spots. The motion of the Kite in the air is so smooth and even as hardly to be perceptible; sometimes it will remain quite motionless for a considerable space of time, and, at others, glide through the sky without the least apparent action of its wings. It is observed by lord Bacon, that when



Kites fly high, it portends fine and dry weather. These have been reckoned birds of passage by some authors, but they certainly continue in England throughout the year.

The length of this species is twenty-seven inches, the breadth about five feet, and the weight forty-four ounces: the bill is two inches long, and very much hooked at the end: the skin at the base of the bill is yellow, and the head and chin of a light grey; though sometimes white, marked with oblong streaks of black: the neck and breast are of a tawny red, but the middle of the feathers are black. The spots are less numerous on the belly and thighs, and under the tail they almost disappear. The back is brown, the first five quill feathers are black, and on the inner webs of the others are large blotches of white: the coverts of the wings are varied with tawny black and white; and the tail is of a tawny red; the outer feathers on each side being of a darker hue than the rest. The thighs are clothed with very long feathers, and the legs are yellow and strong. These birds, however, sometimes differ in their colours, some having been seen that were entirely tawny.

#### NATURAL HISTORY of the COMMON BUZZARD.

Of all birds of the hawk kind, the kite is the best known, but the Buzzard is the most common in England. It is a sluggish inactive bird, and sometimes remains whole days together perched upon the same bough. He may be considered rather as an assassin than a pursuer, and lives more upon frogs, mice, and insects, which he can easily seize, than upon birds which he is obliged to follow. His summer food is obtained by robbing the nests of other birds, and sucking their eggs. He resembles the owl in his countenance more than any other rapacious bird of day. The stupidity of his disposition is portrayed in his figure; and so little is he capable of receiving instruction from man, that it is common to a proverb to give to a stupid person the name of Buzzard.

This bird breeds in large woods, and usually builds on an old crow's nest, which it enlarges and lines with wool and other soft materials: it lays two or three eggs, which are sometimes entirely white, and sometimes spotted with yellow. If the hen Buzzard should happen to be killed, the cock will hatch and bring up the young. The young accompany the old ones for some little time after they have quitted the nest, which is a remarkable circumstance; for all other birds of prey drive away their brood as soon as they can fly. This bird is subject to some variety in its colours; but usually the breast is of a yellowish white, spotted with oblong rust-coloured spots, pointing downwards: the back of the head and neck, and the coverts of the wings are of a deep brown, edged with a pale rust colour. The feathers on the shoulders and the sides of the back are brown, but white towards the roots; the middle of the back is covered only with a thick down. The ends of the quill feathers are dusky; their lower exterior sides ash-coloured, and their interior sides blotched with darker and lighter shades of the same. The tail is barred with ash-colour and black, the bar near the tip being black, and much broader than any of the rest: the tip itself is whitish.

The length of this species is about twenty-two inches, the breadth, with the wings extended, fifty-two, and the weight about thirty-two ounces.

This bird is subject to variety in its colours, some having been seen whose breasts and bellies were brown, and only marked over the crown with a large white crescent.

#### The HONEY BUZZARD.

The Honey Buzzard differs from the common kind, in the membrane at the base of the beak, called the cere, which is blackish, and the beak is of the same colour: the circle round the pupils of the eyes are of a fine yellow, the head is ash-coloured, the neck, back, scapulars, and covert feathers of the wings are of a deep brown; the breast and belly are white, marked with dusky spots pointing downwards: the tail is long and of a dullish brown, having three broad dusky bars; between each of which are two or three narrow ones of the same colour. The legs are short, strong, and thick, and the claws large and black. It is in length, from the beak to the end of the tail, about twenty-three inches, about twenty-two in breadth when the wings are extended; and weighs about sixteen ounces. This bird runs swiftly like a hen, and the female is larger than the male. The eggs are of an ash-colour with dark spots.

Mr. Willoughby informs us that the Honey Buzzard builds its nest with small twigs, and covers them with wool, and as he has found the combs of wasps in the nest, he gave this species the name of the Honey Buzzard; and he adds, that it feeds on the young of those insects, on frogs, lizards, &c.

#### The TURKEY BUZZARD.

This bird is a little larger than a wild goose, and the feathers are a mixture of black, grey, and white, but the greater part are black; the bill is thick, crooked and pointed, and the claws thick and very short. Some imagine it to be a kind of eagle; and it is said that when an ox lies down in the field to repose, if these birds happen to see him, they fall immediately upon him and devour him: an hundred or more at a time are sometimes employed in this business. They have excellent eyes, and can discover their prey at a vast height.

#### The MOOR BUZZARD.

Though this bird is called in Latin *Milvus*, or Kite, it is more properly a Buzzard, not having a forked tail, the distinguishing mark of the kite. It is called *le bufard de marais* by Brisson. It frequents heaths, moors, and marshy places, and never soars like other hawks; but usually sits on the ground, or on small bushes. It makes its nest in the midst of a tuft of grass or rushes, and lays two or three eggs. It is a fierce voracious creature, and makes great havock among rabbits, young wild ducks, and other water fowl. The usual length of this bird is twenty-one inches; the breadth, with the wings extended, four feet three inches; the tail is black, and the skin at the base of it yellow; the irides are also yellow. The whole bird, the head only excepted, is of a chocolate brown, tinged with rust colour. On the head is a large yellowish spot, and some have been seen whose heads were entirely white; others again have been found with a whitish spot on the coverts of the wings; but these are only to be considered as varieties. The legs of this bird, which are long and slender, are covered with feathers a little below the knee; and, in general, the make of the body is longer and less bulky than that of other birds of prey. The uniform colour of its plumage, and the great length and slenderness of its legs, distinguish it from all other hawks.

The hen-harrier, whose female is called the ring-tail, has its name from being an enemy to hens. It differs from others of this kind in having a white tail, except the middle feathers, which are entirely grey; and in having upright feathers about the ears, surrounding the head like a crown. This bird is usually about twenty inches long, and three feet nine inches broad, when the wings are extended.



## NATURAL HISTORY of the KESTRIL.

**T**HIS bird is also called the Stannel and the Windhover. The male of this beautiful species is but about fourteen inches in length, two feet three inches in breadth, and six ounces and an half in weight: its colours immediately distinguish it from all other hawks. The crown of the head, and the greater part of the tail, are of a fine light grey, and on the lower part of the latter is a broad black bar; the tip is white; the back and coverts of the wings are red inclining to purple, embellished with elegant black spots. The interior sides of the quill feathers are dusky, deeply indented with white. The female weighs eleven ounces, the colours are not so bright as in those of the male; the breast is of a dirty white, and the middle of each feather has an oblong dusky streak, pointing downwards.

The Kestrel breeds in the hollows of trees, in the holes of high rocks, towers, and ruinous buildings. They lay four eggs at a time, which appear as if they had been belined over with red, and only here and there a spot of white is to be seen. Its food is field mice, small birds, and insects, which it will discover at a vast distance. This is the hawk so frequently seen in the air, fixed in one place, and fanning it with its wings; at which time it is watching for its prey. When falconry was in fashion in this island, the Kestrel was tamed, and trained for catching small birds and young partridges.

## NATURAL HISTORY of the HOBBY.

**T**HE Hobby was used in the humbler kind of falconry; particularly in what was called darning of larks. The lark is greatly terrified at the sight of a Hobby, inasmuch that, in order to avoid it, they will fly into a waggon, a coach, or even into a man's bosom as an asylum. Mr. Willoughby admits that the Hobby breeds in England, but asserts it is a bird of passage: the length of the male is about one foot, the breadth two feet three inches, and the weight seven ounces; the crown of the head and back are of a deep blue, inclining to black: the hind part of the head is marked with two palish yellow spots, and each side with a large black one pointing downwards: the coverts of the wings are of the same colour with the back, except that they are slightly edged with rust colour: the interior webs of the secondary and quill feathers are varied with oval reddish spots. The two middle feathers of the tail are of a deep dove colour, and the rest are barred on their interior sides with rust colour, and tipped with a dirty white. The spots on the breast of the female are of a brighter colour than on that of the male: the female is also much larger, and her legs have a tinge of green, though she resembles the former in other respects.

## NATURAL HISTORY of the SPARROW-HAWK.

**T**HE difference in size between the male and female Sparrow-Hawk, is very disproportionate; the former usually weighing about five ounces, the latter nine ounces: the length of the male is generally about twelve inches, and the breadth twenty-three; the length of the female fifteen inches, and the breadth twenty-six.

Like other birds of the hawk kind, these vary greatly in their colours; in some, the back, head, coverts of the wings, and tail, are of a deep bluish grey; in others of a deep brown, edged with a rusty red. The quill feathers are dusky, with black bars on their outer webs, and spotted with white on the lower part of their inner webs. On the tail, which

is a deep ash-colour, there are fine broad black bars, and the tip is white; the breast and belly are of a cream-colour, adorned with transverse waved bars, of a deep brown in some, and orange coloured in others. The skin at the base of the bill, the irides, and the legs are yellow. The colours of the female are different from those of the male: the head is of a deep brown, the back and coverts of the wings are brownish mixed with dove colour; the tail is of a brighter dove colour: the waved lines on the breast are more numerous than those on the breast of the male, and the breast is whiter.

This is the most pernicious hawk we have in England, and makes great depredations among pigeons and partridges. It builds in high rocks, large ruinous buildings, and hollow trees. It lays four eggs, which are white, encircled with red specks near the larger end. Mr. Willoughby places the Sparrow-Hawk among the short-winged hawks, or such whose wings will not reach the end of the tail when closed.

The Sparrow-Hawk was held in great veneration among the ancient Egyptians, because it represented their god Osiris: if any person had killed one of these birds, whether by accident or design, he was irremissibly punished with death. Among the Greeks, the Sparrow-Hawk was consecrated to Apollo, or the sun. It served for omens. It was also one of the symbols of Juno, because it had a fixed and piercing sight, like that goddess, when she was actuated by jealousy.

## NATURAL HISTORY of the MERLIN.

**T**HOUGH smaller than any of the hawk kind, and not much larger than a thrush, the merlin displays a degree of courage that renders him formidable to birds of six times his magnitude. He has often been known to kill a partridge or a quail at a single pounce from above. The bill is of a bluish lead colour, and round the neck, a little below the head, there is a ring of a yellowish white. The back, and upper part of the body are of a deep bluish ash-colour, adorned with streaks and spots of iron grey, and edged with the same: the quill feathers are almost black, marked with reddish spots: the under coverts of the wings are brown, embellished with round white spots. The tail, which is about five inches long, is crossed with alternate bars of dusky and reddish clay colour: the breast and belly are of a cream colour, with oblong brown spots pointed downwards. The legs are yellow, and the wings, when closed, reach within an inch and an half of the end of the tail. This and the sparrow-hawk were often trained for hawking; and this species, small as it is, was inferior to none in point of spirit. It was used principally for taking partridges, which it was remarkable for killing by a single stroke on the neck: the female, as in other birds of prey, is larger than the male. The Merlin flies low, and is frequently seen about the roads, skimming from one side of the hedges to the other, in search of prey. This bird was known to our British ancestors by the name of Llamysden; it was used in hawking, and its nest was valued at twenty-four pence, a large sum of money in those early days!

## NATURAL HISTORY of the GREATER BUTCHER BIRD.

**T**HE Greater Butcher Bird is about the size of a black-bird; its bill, which is black, is about an inch long, and hooked at the end. To this mark, together with its carnivorous appetites, it is indebted for its rank among the rapacious birds; but



but its slender legs and feet, and its toes, which are formed differently from the former, seem to make it the shade between such birds as live wholly upon flesh, and such as live principally upon grain and insects. Its habits seem indeed to correspond perfectly with its conformation, as it will feed indiscriminately upon flesh and insects, and, in some measure, is found to partake of a double nature. Its appetite for the former, however, is most prevalent, for when it can obtain flesh, it always gives it the preference to insects. Thus circumstanced, the life of this bird, is a life of continual combat and opposition: its size being too insignificant to terrify some of the smaller birds of the forest, it frequently meets with those that are willing to try its strength, and it never declines the engagement.

It is astonishing to behold with what intrepidity this little creature will engage with the pie, the crow, and the kestrel, all of which are considerably larger than itself, and sometimes prey upon flesh in the same manner. The Butcher Bird not only fights upon the defensive, but frequently begins the attack, and always with advantage; particularly when the male and female unite to protect their young, and to drive away the more powerful birds of rapine. They do not, at that season, wait the approach of their invader; it is sufficient that they see him at a distance preparing for the assault. They immediately fall forth with loud cries, and attack with uncommon fury. They are generally victorious in these kinds of disputes; but it sometimes happens that they fall to the ground with the adversary, and the combat ends with the destruction of both the assailant and the defender.

The most redoubtable birds of prey are upon friendly terms with the Butcher Bird; the kite, the buzzard, and the crow, seem rather to fear it than endeavour to offend it. Nothing better displays the respect paid to the claim of courage, than to see this little bird, so contemptible in appearance, fly in company with the lanner, the falcon, and all the tyrants of the air, fearless of their power or their resentment.

Small birds are its usual food; it seizes them by the throat, and strangles them in an instant; the Germans therefore call this bird Wurchangel, or the suffocating angel. When it has thus killed the bird or insect, it fixes them upon some neighbouring thorn, and then pulls them to pieces with its bill. When confined in a cage, they treat their food in much the same manner; sticking it against the wires before they attempt to devour it. Nature has not furnished it with strength sufficient to tear its prey to pieces with its feet, as the hawks do; it is therefore obliged to have recourse to this expedient.

During summer, such of the Butcher Birds as constantly reside here, remain among the mountainous parts of the country; but in winter they descend into the plains, and nearer human habitations. The nests of the larger kind are made on the highest trees, but those of the smaller are built in bushes in the fields and hedge-rows. They lay about six eggs, which are white, encircled at the larger end with a ring of brownish red. The outside of the nest is composed of white moss, interwoven with long grass, and the inside is well lined with wool. It is usually fixed among the forking branches of the tree. When the young are first produced, the female feeds them with caterpillars and other insects, but in a short time afterwards, she accustoms them to flesh, which the male is very assiduous in procuring.

In their parental care they differ from most other birds of prey: instead of driving out their young from their nest to shift for themselves, they carefully attend them, and do not forsake them even when they are capable of providing for themselves; for

the whole brood live in one family together. Each family lives apart, and usually consists of the male, female, and five or six young ones: peace and subordination is preserved among them, and they hunt together in concert. These birds are easily distinguishable at a distance, not only from their being in companies, but from their peculiar manner of flying, which is seldom direct or sideways, but generally moving up and down.

This bird weighs about three ounces, and is about ten inches in length and fourteen in breadth; its bill is one inch long, black, and hooked at the end: the nostrils are oval, covered with black bristles pointing downwards. The head is very large, and the muscles that move the bill are very thick and strong. The crown of the head, the back, and the coverts on the joints of the wings are ash-coloured, the rest of the coverts are black; the quill feathers are black, with a broad white bar in the middle, and all of them are tipped with white, except the four first feathers, and four of those next the body: the tail consists of twelve feathers, the longest of which is in the middle. Each side of the head is white, with a broad black stroke crossing from the bill to the hind part of the head: the throat, breast, and belly are of a dirty white, and the legs are black. The female is of the same colour with the male, except on the breast and belly, which are marked with numerous semicircular lines.

#### The RED BACKED BUTCHER BIRD.

The male weighs about two ounces; the female two ounces and two drams. The length of the male is seven inches and an half, and the breadth eleven inches; the head and the lower part of the back are of a fine light grey, a broad black stroke runs across the eyes from the bill: the upper part of the back and the coverts of the wings are of a bright iron colour; the breast, belly, and sides, are of an elegant blossom colour; the two middle feathers of the tail are the longest, and entirely black. The lower part of the others are white. In the female, the stroke across the eyes is of a reddish brown; the head of a dull rust colour inclining to grey; the breast, belly, and sides of a cream colour, marked with semicircular dusky lines; the tail is of a deep brown, except that in both the male and female, the exterior webs of the outward feathers on each side are white. These birds build their nests in low bushes, and lay about six eggs, which are white, encircled on the larger end with a ring of brownish red.

#### The WOOD-CHAT.

The size of this bird is about equal to the preceding: the bill is of the colour of horn; the feathers that surround the base are whitish, a black line crosses the eyes, and goes downward on each side of the neck: the head and the hind part of the neck are of a bright bay; the upper part of the back dusky; the coverts of the wings and tail dusky: the quill feathers are black, with a white spot on each towards the bottom; the throat, breast, and belly are of a cream colour; the two middle feathers of the tail are black; the exterior edges and the tips of the rest white. In the female, the upper part of the head, neck, and body are reddish, striated with brown; the lower parts of the body are of a cream colour, with rays of brown: the tail is reddish inclining to brown, and tipped with red.

#### The LEAST BUTCHER BIRD.

This species is less than either of the former; it is found near the marshes in London, and has been seen near Gloucester. This is also a bird of prey, though not much larger than a tit-mouse; an evident proof that an animal's courage or rapacity does

not



not depend upon its size. Its form resembles that of a long-tailed tit-mouse. The bill is yellow, short, strong, and very convex: the head is of a fine grey; and beneath each eye is a long triangular tuft of black feathers; the throat is white, and the middle of the breast flesh-coloured; the sides and thighs of a pale orange; the hind part of the neck, and the back of an orange bay. The secondary feathers of the wings are black edged with orange; the quill feathers are dusky without, and white within; the lesser quill feathers being tipped with orange; the two middle feathers of the tail are the longest, the others shorten gradually on each side, the exterior on each side being of a deep orange colour. The legs are black. The female has not the black mark beneath each eye, nor the fine flesh colour on the breast: the crown of the head is of a brownish rust colour spotted with black.

#### NATURAL HISTORY of the OWL.

**H**AVING described the rapacious animals of the day, we now come to a race equally cruel and rapacious, which add treachery to their savage disposition, and carry on their depredations in the night.

Owls, like other nocturnal robbers, surprize their prey at those hours of rest, when the tribes of nature are in the least expectation of an enemy. Thus, in nature's chain, no link appears to be broken; every place, every season, every hour of the day and night is bustling with life, and furnishing instances of industry, self-defence, and invasion.

Birds of the Owl kind have a general mark by which they are distinguished from others; such is the formation of their eyes, that they see better in the dusk, than in open day-light. Thus, in the eyes of tigers and cats, which are formed for a life of nocturnal depredation, there is a quality in the retina that takes in the rays of light so copiously as to permit their seeing in almost total darkness; so in these birds there is the same conformation of that organ; and though they cannot see where there is an absolute exclusion of light, they are sufficiently quick-sighted, when every thing is imperceptible to us. Nature, in the eyes of all animals, has carefully shut out too much light, or admitted a sufficiency, by the contraction and dilatation of the pupil. In these birds the pupil is capable of shutting very close, or being greatly extended: by contracting it, the brighter light of the day, which would act too powerfully upon the sensibility of the retina, is excluded; by dilating it, the bird takes in the fainter rays of the night, by which it is enabled to discover its prey, and seize it with greater facility in the dark.

But though birds of the Owl kind are dazzled with refulgent light, yet they do not, as some have imagined, see best in the darkest nights. Their vision is best in the dusk of the evening, or the grey of the morning, when they are not incommoded with too much or too little light. It is then that they quit their solitary retreats to hunt or to surprize their prey, and their labours are, in general, attended with success. Almost all other birds are then asleep, or preparing for repose, and the most unguarded becomes the prey of these rapacious animals. But the nights when the moon shines are the times of their most successful plunder.

The faculty, however, of seeing in the night, or of being entirely dazzled by day, is not alike in every species of these nocturnal birds. Some see in the night better than others, and some are so little dazzled by day-light, that they perceive their enemies and avoid them. The common white or barn Owl, for instance, sees the smallest mouse that peeps

from its hole, though the barn is shut at night, and the light in a manner totally excluded: on the contrary, the brown Owl is often seen to prowl along the hedges by day, like the sparrow-hawk, and frequently with good success. In proportion as each of these animals best bears the day-light, he proceeds the earlier in the evening in pursuit of his prey. The great horned Owl is the foremost in quitting his retreat, and penetrates the woods and thickets very soon in the evening. The horned Owl, and the brown Owl, are later in their excursions; but the barn Owl seldom leaves his hiding-place till midnight, seeming to prefer almost total obscurity to the dusk of the evening, or the grey of the morning.

As these birds are incapable of supporting the light of the day, or at least of seeing and readily avoiding their danger at that time, they remain concealed in some obscure retreat, adapted to their gloomy dispositions. Their usual places of abode are the cavern of a rock, the darkest part of a hollow tree, the battlements of a ruined and unfrequented castle, or some obscure hole in a farmer's barn or out-house.

At the approach of evening the Owl sallies forth, and skims rapidly up and down along the hedges. The barn Owl, indeed, as it lives chiefly upon mice, is contented to be more stationary: he places himself upon some shock of corn, or on the point of an old house, and watches in the dark with great vigilance and perseverance.

These birds have a most hideous note, which is often heard in the silence of midnight, and breaks the general pause with an horrid variation; but though this note is different in all, it is alarming and disagreeable in each of them. Mankind are united in allowing the cry of the Owl to be disagreeable; and the screech Owl's voice was formerly considered among the people as a presage of some sad calamity that was speedily to happen.

But while they are in pursuit of their prey, this note is seldom heard; that important business is always transacted in silence, as they by no means intend to disturb or forewarn those little animals they wish to surprize. When they have been successful, they soon return to their solitude: when they find but little game, they continue upon the watch still longer; and sometimes, hearkening to the voice of appetite, rather than to that of prudence, they pursue so long that broad day breaks in upon them, and leaves them dazzled, bewildered, and at a distance from their retreat. Thus situated, they are obliged to take shelter in the first tree or hedge that presents itself, where they conceal themselves all day, till the returning darkness enables them to take a plan of the country to discover where they are. But it frequently happens that, with all their precaution to conceal themselves, when thus surprized by day-light, they are discovered by other birds, from whom they must expect no mercy. The black-bird, the thrush, the jay, the bunting, and the red-breast, all surround him, and employ their little arts of insult and abuse. The smallest and most contemptible of the Owl's enemies, are then the foremost to injure and torment him. They taunt him with their cries, flap him with their wings, and endeavour to appear courageous, as they are apprehensive of no danger: the wretched bird of night, not knowing where to attack, or where to fly, sits patiently and suffers all the indignities they offer: astonished and dizzy, he answers their insults by awkward and ridiculous gestures, by turning his head about, and rolling his eyes with an air of stupidity. The appearance of an Owl by day-light is enough to set the whole grove into a kind of uproar; for the aversion all the small birds have to this animal, or the consciousness of their own security, makes them pursue him without ceasing,



sing, while, by their mutual cries, they encourage each other to assist in this laudable undertaking.

Sometimes, indeed, the little birds pursue their insults with the same imprudent zeal with which the Owl himself has pursued his depredations: they hunt him till the evening returns, which restoring his faculties of sight, he makes his pursuers pay dear for the sport which he had furnished them. Whatever mischief one species of Owl may do in the woods, the barn Owl makes a sufficient recompence by its activity in destroying mice; a single Owl being supposed to be more serviceable than half a dozen cats in ridding the barn of its domestic vermin.

The Owl, or bird of night, was consecrated to Minerva, as the symbol of vigilance, because it is awake during the night. It was reckoned a bird of ill omen. In Virgil, a solitary Owl perched on the roof of the palace, affrights Dido with its dismal groans. *Æsculaphus*, says Ovid, was changed into an Owl, a bird which forebodes only misfortunes.

#### The GREAT HORNED OWL.

This bird, at the first view, appears as large as an eagle, but, when more closely observed, he will be found much smaller. His head, body, wings, and tail, are shorter; his head larger and thicker. His horns are composed of feathers, which rise about two inches and an half high, and which he can erect or depress at pleasure: his eyes are large and transparent, encircled with an orange-coloured iris: his ears are large and deep: the bill is black; the breast and belly are of a dull yellow, marked with slender brown strokes pointing downwards: the thighs are of the same colour, but unspotted. The back, and coverts of the wings, are varied with deep brown and yellow: the quill feathers are of the same colour, with a broad bar of red near the ends of the exterior ones: the tail is marked with dusky and reddish bars, but appears ash-coloured beneath; the feet are feathered down to the claws.

The Great Horned Owl usually breeds in the cavern of a rock, the hollow of a tree, or the turret of some ruined castle. Its nest, which is almost three feet in diameter, is composed of sticks, bound together by the fibrous roots of trees, and lined with leaves of trees. It usually lays three eggs, which are as large as those of a hen, and of a colour somewhat resembling the bird itself. The young are very voracious, and the parents are assiduous and expert in providing food for them. This species is sometimes found in the north of England, in Cheshire, and in Wales.

#### The LESSER HORNED OWL.

The horns of this species are small, consisting only of a single feather each, which it can raise or depress at pleasure; and, in a dead bird, these horns are hardly to be discovered. This kind is less common than the former; but it is found in the mountainous woody parts of our island: both are solitary birds, and avoid inhabited places. These species might with propriety be called long-winged Owls; their wings, when closed, reaching beyond the end of the tail.

The head of the Lesser Horned Owl is small, resembling that of an hawk, the bill is dusky: the circle of feathers which immediately surrounds the eyes, is black; the larger circle is white, terminated with tawny. The feathers on the head, back, and coverts of the wings are brown, edged with a dullish yellow: the breast and belly are of the same colour, with a few long narrow streaks of brown pointing downwards: the thighs, legs, and toes, are covered with yellow feathers; the quill feathers are dusky, barred with red: the tail is of a deep brown, embellished with a yellow circle on each side of the shaft of each feather. The tip of the tail is white.

This Owl never makes a nest for itself, but is satisfied with the old nest of some other bird, which it has often been obliged to abandon. It lays four or five eggs. At first the young are all white, but they change colour in about a fortnight.

There is still a smaller kind of the Horned Owl, which is not much larger than a thrush, and has remarkably short horns.

#### The WHITE OWL.

The White Owl is almost domestic, inhabiting the greater part of the year, barns, hay-lofts, and other out-houses, and is extremely useful in clearing those places of mice. It quits its perch about twilight, and takes a regular circuit round the fields, skimming along the ground in quest of field mice, and then returns to its usual residence. In the breeding season it takes to the woods. The elegant plumage of this bird sufficiently compensates for the uncouthness of its form: a circle of soft white feathers surround the eyes: the upper-part of the body, the coverts and secondary feathers of the wings, are of a fine pale yellow, with two grey and two white spots on each side of the shafts: the exterior sides of the quill feathers are yellow, the interior white, with four black spots on each side: the lower side of the body is entirely white; the interior sides of the feathers of the tail are also white; the exterior are marked with some obscure dusky bars: the legs are feathered to the feet, and the feet are covered with short hairs. The usual length of this bird is about fourteen inches, and the breadth three feet.

Owls in general are very shy of man, very indomitable, and difficult to be tamed. The White Owl, in particular, as Mr. Buffon asserts, cannot be taught to endure captivity; but it is probable he means if it be taken when old. He informs us that they live ten or twelve days in the aviary where they are shut up; but they refuse all kind of nourishment, and at last die of hunger. By day they remain motionless upon the floor of the aviary; in the evening they mount on the highest perch, where they incessantly make a noise like a man snoring with his mouth open. "This seems," says Mr. Buffon, "designed as a call for their old companions without; and, in fact, I have seen several others come to the call, and perch upon the roof of the aviary, where they made the same kind of hissing, and soon after permitted themselves to be taken in a net."

#### The BROWN OWL.

The head, wings, and back of this bird are of a deep brown, elegantly spotted with black: the coverts of the wings and the scapulars, are adorned with white spots: the exterior edges of the four first quill feathers are serrated: the breast is of a very pale ash-colour, mixed with tawny, and marked with oblong jagged spots: the circle round the face is ash-coloured, spotted with brown. It inhabits the woods, where it remains the whole day. These Owls are very clamorous in the night, and approach our dwellings. They frequently enter pigeon houses, where they make great havoc. They breed in hollow trees, or ruinous buildings, and lay about four white eggs of an elliptic form.

#### The LITTLE OWL.

This elegant species hardly exceeds a thrush in size, though the fullness of its plumage makes it appear larger. It has a light yellow ring round the eye, and the bill is of a paler colour: the feathers which encircle the face, are white, tipped with black. The head is brown, spotted with white: the back and coverts of the wings are of a deep olive brown, the latter being spotted with white: on the breast is a mixture of brown and white: the belly is white, spotted with brown: the tail is of the same colour with



# BIRDS.

THE GREY OWL



THE ASIO



THE EAGLE OWL



THE LITTLE OWL



THE SCOPS



THE CUCKOW



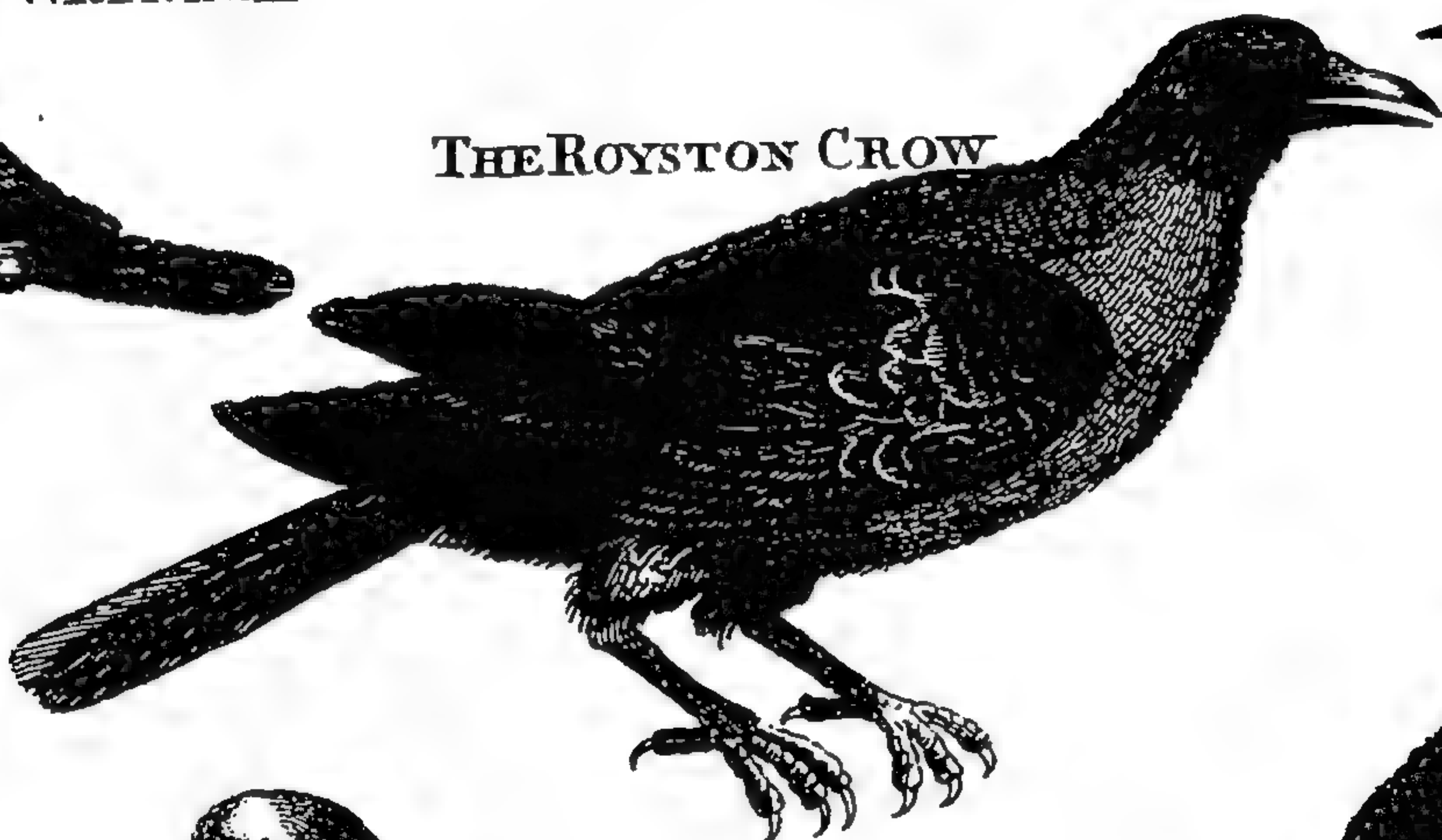
THE SPOTTED  
WOODPECKER



THE WRYNECK



THE ROYSTON CROW



THE MEROPS



THE GREEN PARROT



THE HAGGARD  
FALCON



THE QUAIL



THE SEA LARK



THE PAROQUETTE



THE MOOR BUZZARD



THE KESTREL



THE BUZZARD





with the back, and each feather is barred with white. The legs and feet are covered with feathers down to the claws.

To these might be added the Screech-Owl, with blue eyes, and plumage of an iron grey: the Howlet, with dusky plumes and black eyes. And to this catalogue might also be added others of foreign denominations, which differ but little from our own; if we except the Harfang, or Great Hudson's-Bay Owl, which is the largest of all the nocturnal tribe,

and as white as the snows of the country where it is produced.

All this tribe of birds, however they may differ in their size and plumage, agree in the general characteristics of seeking their prey by night, and having their eyes formed for nocturnal vision. Their bodies are muscular and strong; their feet and claws admirably adapted to the tearing of their prey, and their stomachs for digesting it.

## C H A P. II.

*Containing the NATURAL HISTORY of BIRDS of the POULTRY KIND, viz. the COCK and HEN, the HAMBURGH COCK, the PEACOCK, the TURKEY, the PHEASANT, the GUINEA-HEN, the BUSTARD, the COCK of the WOOD, the BLACK COCK, the GROUSE, the PTARMIGAN, the PARTRIDGE, and the QUAIL.*

**B**IRDS of the Poultry Kind are the most harmless and the most serviceable to man: he may compel the rapacious tribes to assist his pleasures in the field, or induce the warblers to delight him with their songs; but he derives the most solid advantages from the Poultry kind, which make a considerable addition to the necessaries of life, and furnish some of the greatest delicacies for the table.

Most of the domestic birds of the Poultry Kind, which we maintain in our yards, are of foreign extraction; but there are others to be ranked in this class, that are still in a state of nature. The tame Poultry which we have imported from distant climates have increased amazingly among us; but those wild birds of the Poultry Kind, that have never yet been taken into keeping, have been diminished and destroyed.

Birds of the Poultry Kind are such as have white flesh, and, in proportion to their head and limbs, have bulky bodies. They have short strong bills for picking up grain: their wings are short and concave, and consequently they cannot fly far. They lay a great many eggs, and lead their young brood abroad in quest of food, the very day they are hatched; the young, from the instructions of the mother, being able instantly to help itself. They usually make their nests on the ground. The toes of all these are united by a membrane as far as the first articulation, after which they are divided. We may therefore rank under this class the common cock, the peacock, the turkey, the pintada or Guinea hen, the pheasant, the bustard, the grouse, the partridge, and the quail. All these birds bear a strong similitude to each other, being equally granivorous, fleshy and delicate to the palate.

The rapacious class are formed by Nature for war, and she seems equally to have qualified these for peace, society and repose. Their wings are ill-formed for wandering from one region to another, for they are but short; their bills are also short, and incapable of annoying their opposers: their legs indeed are strong; but their toes are calculated for scratching up their food, and not for holding or tearing it. These are sufficient indications of their inoffensive nature; while their fat and fleshy bodies render them unwieldy travellers, and incapable of straying far. We therefore find them chiefly in society, and though, like other animals, they sometimes have their disputes; yet, when they live in the same district, or are fed in the same yard, they are taught subordination; and in proportion as each is acquainted with his own strength, he never ventures in the combat a second time, where he knows he shall be vanquished.

All the birds of this kind seem to lead an indolent voluptuous life; as they are furnished with a strong stomach, usually called a gizzard, they are extremely voracious. When closely confined, and separated from all their former companions, they still enjoy the pleasure of eating, and grow fat and unwieldy in their prison. Many of the wilder species of birds, when in captivity, pine away, grow gloomy, and some even refuse all manner of sustenance; none except those of the poultry kind grow fat under confinement; they seem to lose all remembrance of their former liberty, being perfectly satisfied with indolence and plenty. They may be considered as sensual epicures, solely governed by their appetites, which destroy among them that conjugal fidelity for which most other kinds are remarkable. Eagles and other ferocious birds are true and gentle to each other: when their connections are once formed, they end but with their lives; and in every exigence and every duty, the male and female lend faithful assistance to each other.

But it is very different with the poultry kind: Their courtship is extremely short, and their congress fortuitous. Heedless of his offspring, the male leaves all the care of providing for posterity to the female. Wild and irregular in his appetites, he ranges from one to another, and claims every female which he is strong enough to keep from his fellows. When opposed to birds of prey, he is dastardly and timorous, but extremely valiant among those of his own kind: to see a male of his own species is generally sufficient to produce a combat. As he considers the farm-yard as his seraglio, every creature that pretends to be his rival, becomes his enemy. The female, equally a stranger to fidelity or attachment, yields to the most powerful. She seems an unconcerned spectator of the effects of their fury, and readily rewards the conqueror.

The female takes upon herself all the labour of hatching and rearing her young, and selects a place for hatching as remote as possible from the cock. She does not indeed bestow much trouble in making a nest, well knowing that her young ones are to forsake it the moment they part from the shell.

She does not require the assistance of the male in providing for her young; they have not food put into their mouths as in other classes of the feathered kind, but, following the parent, they peck their food wherever it is to be found. She conducts them to places where they are likely to have the greatest quantity of grain, and shews them, by her example, what is proper for them to eat. Though at other times voracious, she is then extremely moderate, and chiefly intent upon pointing out the food to

the



the young clutch, hardly taking any nourishment herself. Her parental care seems to triumph over every appetite; but that care decreases in proportion as her young ones become more able to provide for themselves; and, when they cease to require her aid, all her voracious habits return.

#### NATURAL HISTORY of the COCK and HEN.

**O**F all other birds, the Cock seems to have been first reclaimed from the forest, and taken to supply the accidental failure of the luxuries or necessities of life. Having been longest under the care of man, he exhibits the greatest number of varieties, not two birds of this species being seen to resemble each other exactly, in form and plumage. The tail, which is so great an ornament to the generality of these birds, is entirely wanting in others. The toes are usually four in animals of the poultry kind, but in one species of the Cock, which abounds in the environs of Dorking in Surry, they amount to five. The feathers, which in most of them lie so sleek and in such beautiful order, are in a peculiar breed all inverted, and stand the wrong way. Nay, there is a species from Japan, which, instead of feathers, seem to be covered over with hair. These and many other varieties are to be found in this animal, which seem to be the marks this early prisoner bears of his long captivity.

When the Cock was first made domestic in Europe, is not well ascertained; but it is generally supposed he came first into the western world, from Persia. The Cock is called the Persian bird by Aristophanes, who tells us he enjoyed that kingdom before some of its earliest monarchs. In the most savage parts of Europe, this animal was so early known, that the Cock was one of the forbidden foods among the ancient Britons. Indeed, the domestic fowl seems to have banished the idea of the wild one. Persia itself, from whom we first received it, seems no longer to know it in its natural form; and if it was not sometimes seen wild in the woods of India, as well as those of the islands of the Indian Ocean, we perhaps might doubt, as we do with regard to the sheep, in what form it first existed in a state of nature. But we cannot entertain those doubts: the Cock is seen in his ancient state of independence in the islands of Tinian, in many other islands of the Indian ocean, and in the woods on the coasts of Malabar. In his wild state, his comb and wattles are yellow and purple, and his plumage black and yellow. There is another remarkable peculiarity in those of the Indian woods; their bones, which are white when boiled with us, are there as black as ebony. Whether this tincture proceeds from their food, as the bones of an animal are tinged red by its feeding upon madder, or from what other cause; is a point not easily determined.

When they were first propagated in Europe, there were distinctions which now no longer subsist. Those with a reddish plumage were esteemed by the ancients as invaluable, and the white ones were considered as utterly unfit for domestic purposes. Aristotle seems to make his division of these birds from their culinary uses; the one sort he calls generous and noble, being remarkable for fecundity; the other ignoble and useless, from their sterility. These distinctions are very different from our modern notions of generosity in this animal; that which we call the game Cock being much less fruitful than the ungenerous dunghill Cock, which we look upon with contempt for his want of spirit, compared with the other animal. The Athenians, like us, had their Cock-matches; but it is probable they did not, like us, make choice of the most barren of the species for the purposes of combat.

It is certain, however, that no animal in the world is more courageous than the Cock, when opposed to one of his own species; and wherever refinement and polished manners have not taken place, Cock-fighting is a principal diversion. In India, China, the Philippine islands, and all over the East, it is the sport and amusement even of princes. In England, it is declining daily, and in a short time it will probably become the pastime of only the lowest vulgar. It is the prevailing opinion, that we have a bolder and more valiant breed than is to be found elsewhere: but the truth is, they have Cocks in China equal if not superior to ours in valour, and are also stronger and larger. It is surprising that those men who venture hundreds, nay even thousands upon the prowess of a single Cock, have not taken every method to improve the breed, and particularly that of crossing the strain, as it is called, by a foreign mixture. But, as Cock-fighting is a mean ungenerous amusement, we would not wish to promote it by our instructions.

The extraordinary courage in the Cock, is supposed to proceed from his being the most salacious of all other birds, and the only animal whose spirits are not abated by indulgence. But he presently becomes old, and exhausted; and in three or four years absolutely unfit for the purposes of impregnation.

The Hen seldom clutches a brood of chickens above once a season, though it sometimes happens that she produces two. A domestic Hen will lay upwards of two hundred eggs a year, when properly supplied with food and water: she will continue to lay when she is not impregnated by the male, but eggs of this kind, though equally proper for food and all other domestic purposes, can never by hatching be brought to produce a living animal.

We may judge of the eggs of all other birds by those of the common hen, in which the yolk and the white are readily distinguished; but there is one kind of white which surrounds the yolk, and another which encompasses that: there are also ligaments which support the yolk, near the center of the egg, and two membranes, one surrounding the yolk, and the other the white; there are also a third and fourth which encompass them, and a shell that defends the whole; which serves to preserve the chicken from any accident till it is formed, and ready to come out of its prison. The cicatrice, or small white spot on the membrane which surrounds the yolk, is the real germ that contains the chicken in miniature.

The changes produced in this germ, from time to time, cannot possibly be discovered, on account of the fluids which surround it. The white, however, is thought to serve instead of milk to feed the young, and the yolk to be that part from whence the growth proceeds.

The Hen, if left to herself, forms but a very indifferent nest; a hole scratched in the ground among a few bushes, is the only preparation she usually makes for the season of her patient expectation. Nature, almost exhausted by its own fecundity, informs her of the proper time for hatching, which she herself testifies by a clucking note, and by discontinuing to lay. Frugal housewives, who find the eggs more profitable than the chickens, often practice arts to protract this clucking season, and sometimes entirely remove it. Their methods are these: when the hen begins to cluck, they stint her in her provisions; and if that does not produce the desired effect, they plunge her into cold water. This effectually retards her hatching, but it often produces a cold, and the poor bird dies under the operation.

If the Hen were permitted to pursue her own inclinations, she would seldom lay above twenty eggs in the same nest, without attempting to hatch them; but



but if her eggs are removed in proportion as she lays, she still continues to lay, vainly expecting to encrease the number. In the wild state she seldom produces more than fifteen eggs, but her provision is then obtained with more labour, and she is perhaps sensible of the difficulty of maintaining too numerous a family. When she begins to set, her patience and perseverance are incredible, she continues immoveable for some days; and when forced from the nest by the calls of hunger, she quickly returns to her duty. During the time of her sitting she carefully turns her eggs, and often removes them to different situations; till at length, at the end of about three weeks, the young brood begin to give signs of their wishing to be released from their confinement; when by the repeated efforts of their bill they have broke themselves a passage thro' the shell, the hen still continues to sit till they are all excluded. The strongest chicken are generally the first advocates for liberty; the weak ones follow after; and some, which are still more feeble, even die in the shell. When the whole family are produced, she leads them forth to instruct them in the art of providing for themselves. Her affection and her pride seem then to alter her very nature, and render her an amiable bird. No longer cowardly or voracious, she boldly ventures to attack any creature that she supposes would do them any injury, and abstains from every kind of food that her young can swallow. When marching at the head of her little troop, she acts the commander, and has a variety of notes to summon them to their food, or to warn them of approaching danger.

Schemes have been contrived by which a hen that, in the ordinary way, produces but a dozen eggs in the year, may produce as many chickens as eggs, and consequently about two hundred. The contrivance we mean is the artificial method of hatching chickens in stoves, as practised at Grand Cairo, in Egypt; or in a chemical laboratory properly graduated, as has been effected by Mr. Reaumur. The Egyptians built spacious ovens of a form very different from ours, in which they placed a great number of eggs, and by means of a gentle fire, kept them in the same degree of heat as if they were under the hen. Here they remain till the usual time of hatching, and by this means they sometimes produce ten or twelve thousand chickens at a time. But, in our cold climate, the great difficulty is not in the hatching, that being easily performed, but in the clutching the chickens after they have been excluded. Reaumur has made use of what he calls a woollen Hen; which was nothing more than putting the young ones in a warm basket, and placing over them a thick woollen canopy: but the whole apparatus was attended with so great an expence, as to render the scheme rather an object of curiosity than profit.

The Cock is allowed to be a short-lived animal, but how long it would live if left to itself, has not been ascertained. As they are kept only for profit, and in a few years become almost useless, very few would, from mere motives of curiosity, make the tedious experiment of maintaining a proper number till they die. Androvandus is of opinion, that if they were permitted to live, they would attain the age of ten years; and it is probable that this may be the full extent.

The flesh of a Cock contains a great deal of oil and volatile salt, but it is not so much esteemed as that of a Hen, or rather of a Pullet, because it is drier, has a less agreeable taste, and is harder of digestion. The flesh of a Pullet also contains a great deal of oil and volatile salt, and is a most excellent aliment. It is pectoral, easy of digestion, and affords great nourishment. It agrees with all ages and constitutions; but is best suited to those

No. 16.

who are delicate, and lead sedentary lives; for labouring people require stronger, and more substantial food. Eggs are a common aliment, and are equally useful in health and sickness. They digest easily, are very nourishing, abate the acrimony of the fluids, appease coughs, and clear the voice. They are also good for the breath, and greatly exhilarate the spirits; but they should not be boiled till they are hard.

The flesh of a chicken has nearly the same properties as that of a pullet, but it is more delicate and juicy.

The countryman's farm or habitation cannot be said to be completely stored or stocked without Fowl as well as beast, which yield a considerable advantage by their eggs, brood, bodies, and feathers. Any poor cottager that lives by the highway-side may keep them; they being able to shift for themselves the greatest part of the year, by their feeding on insects, corn, or any thing almost that is eatable by other sort of animals; and therefore they are kept to great advantage at barn-doors, and other places, where corn or straw is scattered.

Those Hens that are the best breeders, and the best layers, are to be chosen; the oldest being always the best sitters, and the youngest the best layers; but no sort will be good for either, if they are kept too fat. The best age to set a Hen for chickens, is from two years old to five; and the best month to set them in, is February, though any month between that and Michaelmas is good. Observe to let them have constantly meat and drink near them while they sit, that they may not stray from their eggs, and chill them.

If fowls are fed with buck or French wheat, or with hemp, canary, or millet seed, which is commonly sown in March, it is said, they will lay more eggs than ordinary: and buck-wheat, either whole or ground, and made into paste, which is the best way, is a grain that will fatten fowls or hogs very speedily; but the common food to fatten them with is barley-meal, wet with milk or water; but wheat-flour is better; yet if you intend to bring up chickens, give a barley-corn or two to each of them, as you take them out of the nest, and so continue to feed them until they are fit for fattening.

The Cock was sacred to Minerva, as the symbol of watchfulness, to denote that true wisdom never sleeps. He often accompanies Mercury, who passes for a vigilant God. Cocks were sacrificed to the Lares, because those animals are brought up in houses, whereof the Lares are the guardians.

#### The BANTAM COCK and HEN.

The Bantam Cock is a small, but a very courageous animal, and will fight any thing that opposes him. He has a reddish bill, fine red eyes, and a curious comb on the crown of the head. His ears are covered with a tuft of white feathers, and his neck and back with long streaming feathers of orange colour mixed with yellow. The breast and the lower part of the belly are black. It has long stiff feathers on the thighs, reaching considerably below the knees, and the legs are covered with small feathers as far as the toes. The tail consists of stiff black feathers, among which are two large ones hanging over the rest in the form of a sickle. It is now pretty common in England, though it takes its name from Bantam in the East-Indies, from whence it was originally brought.

The Bantam Hen is small and beautiful; the bill is yellowish, and it has a small white comb, with a few white hairs on the top of the head. The skin round the eyes is reddish and bare, and the ears are covered with a brown tuft of feathers: the rest of the body, and the wings and tail are yellow, mottled with dark brown. The thighs and legs are feathered almost

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down



down to the toes. The colours of the Bantam Hen frequently vary.

#### The HAMBURGH COCK.

This is a very stately fowl: his bill is thick at the base, but ends in a sharp point. His eyes are of a fine yellow, encircled with dark-coloured feathers, under which there is a tuft of black ones which covers the ears. It has a reddish comb, reaching about half way over the head, the hind part being covered with dark-coloured feathers, inclining to black. The throat and gills are of the same colour, with a mixture of orange coloured and red feathers, waving round the neck, which are black at the extremities. The breast and belly are of a dark colour, spotted with black: the thighs, and the lower part of the belly are of a shining velvet black. The upper part of the neck and back is of a darkish red, and the tail consists of red, orange-coloured, and shining black feathers. The legs are of a lead-colour, except at the bottom of the feet, which are yellow.

#### The PEACOCK.

The Peacock, say the Italians, has the plumage of an angel, the voice of a devil, and the guts of a thief. Indeed there is none of the feathered creation can vie with him for beauty, when he appears with his tail expanded; but the horrid scream of his voice lessens the pleasure we should otherwise receive in viewing him; and his insatiable gluttony renders him one of the most noxious domestics that man has taken under his protection.

India first gave us Peacocks; and we are assured that they are still found in vast flocks, in a wild state, in the islands of Ceylon and Java. So beautiful a bird could not be permitted to continue long at liberty in its distant retreat; for so early as the days of Solomon, we find apes and Peacocks, among the articles imported in his Tharshish navies. A monarch so conversant in every branch of natural history, who spoke of trees from the "cedar of Lebanon, even unto the hyssop that springeth out of the wall: who spoke also of beasts and of fowl," would certainly instruct his officers to collect every curiosity in the countries they visited; which gave him a knowledge that distinguished him from all the princes of his time: Ælian relates that they were brought into Greece from some barbarous country, and were held in such high esteem among them that a male and female were valued at Athens at above thirty pounds of our money. When Alexander was in India, we are told he found vast numbers of wild Peacocks on the banks of the Hyarotis, and was so struck with their beauty, as to order a severe punishment on any who should kill or disturb them. When this bird was first introduced among the Greeks, they were so struck with the beauty of it, that every person paid a stated price for seeing it; and several people came from Lacedemon and Theffaly, purely to satisfy their curiosity.

Though the Peacock was first introduced into the West, merely on account of its beauty, mankind were tempted, from its figure, to think of serving it up for a different entertainment, the elegance of the feathers in some measure stimulating the appetite. Hortensius, the orator, was the first who served them up at an entertainment at Rome, and they were afterwards considered as the first of viands, and one of the greatest ornaments of every feast. But their fame for delicacy did not long continue; for in the times of Francis I. we find it was a custom to serve up Peacocks to the tables of the great, not in order to be eaten, but only to be seen: their manner was to strip off the skin, and, after preparing the body with the warmest spices, they again covered it up in its former skin, with all its plumage in full display.

The head and neck, beginning at the breast, are of a deep blue, and the head is small in proportion to the body; on the crown of which is a tuft, consisting of fine green shafts of feathers, bearing a greater resemblance to the stalks of plants newly sprung up, than to feathers. The bill is whitish, and cloven pretty deep: the neck is long and slender; the wings are black towards the back, and red towards the belly. The tail, when spread, appears to be double; the lesser being of a dusky colour, and not standing up like the long one. The long feathers spring out of the rump, and the shorter seem calculated to support them. The long feathers of the tail are of a chesnut colour, embellished with most elegant lines, which shine with gold; but the tips are of a dark green. The eyes of the feathers are party-coloured, of a deep green, shining like a chrysolite, and of a gold and sapphire colour. They consist of four circles, variously tinted; the first is golden, the second chesnut, the third green, and the fourth or middle, blue. The legs are armed with spurs like the common cock, and the belly is of a bluish green. Peacocks delight in spreading their tails to display their beauty, and they are certainly most elegant birds.

The Peacock, like other birds of the poultry kind, feeds principally on corn, and is particularly fond of barley. But, as it is a proud capricious bird, there is hardly any food that it will not sometimes covet. Insects and plants are often eagerly sought, even when it has a sufficiency of its natural food before it. In the indulgence of these pursuits, walls cannot easily confine it; the tops of houses it strips of their tiles or thatch, lays waste the labours of the gardener, roots up his choicest seeds and nips his favourite flowers in the bud. The beauty of this bird is therefore but a poor compensation for the mischief it occasions, and many of the more homely looking fowls have deservedly the preference.

In this country the Pea-Hen seldom lays above five or six eggs before she sits. Aristotle describes her as laying twelve; and it is probable she may be thus prolific in the East-Indies, as they are very numerous in the forests where they breed naturally. These birds live about twenty years; and they have not that beautiful variegated plumage that adorns the tail, till their third year.

Taverner informs us, that near the city of Baroch, in the kingdom of Cambaya, whole flocks of these birds are seen in the fields: that they are extremely shy; run off swifter than the partridge, and hide themselves in thickets. They perch upon trees by night, at which time the fowler approaches them with a kind of banner, on either side of which a Peacock is painted. At the top of this decoy a lighted torch is fixed, and the bird, when disturbed, flies to that which is painted, supposing it to be a real bird, and is thus caught in a noose provided for that purpose.

There are varieties of this bird, some being white, and others crested. That which is called the Peacock of Thibet, is the most beautiful of the feathered creation, having in its plumage all the most vivid colours, disposed in a manner that it is impossible for art to imitate, and form a pleasing figure to delight the eye of the beholder.

The Pea-Hen has no great variety in its colours, the wings, back, belly, thighs, and feet, being all brown, inclining to ash-colour: the top of the head and tuft are of the same colour; except that on the top of the head a few greenish spots are dispersed. The irides are of a lead colour, and the chin entirely white. On the neck the feathers are green and undulated, but at the extremities near the breast they are white.



## NATURAL HISTORY of the TURKEY.

**T**HE Turkey was unknown to the ancient naturalists, and even to the old world before the discovery of America. It was a bird peculiar to the new continent, and is now the most common wild fowl of the northern parts of that country. It was first seen in France in the reign of Francis I. and in England in that of Henry VIII. The first birds of this kind must therefore have been brought from Mexico, which conquest was completed in 1521. Ælian indeed mentions a bird found in India, which some have supposed to be the Turkey; but Gesner and Pennant are of opinion, that it was either the peacock, or some bird of that genus. Those who have resided in the East-Indies, inform us, that though the Turkey is bred there, it is not considered as a native of the country, but only as a domestic bird.

With us Turkeys are, when young, the tenderest of birds; yet, in their wild state, they are found very numerous in the forests of Canada, which are covered with snow above nine months in the year. In their natural woods they are much larger and more beautiful, than in their state of domestic captivity, their feathers being of a dark grey, bordered at the edges with a bright gold colour. These feathers are wove into cloaks by the savages, to adorn their persons; they also form them into umbrellas and fans, but never think of taking those animals into keeping, which they are supplied with in sufficient abundance by the woods. The hunting of the Turkey makes one of the savage's principal diversions, and its flesh contributes greatly to the support of his family. When he has discovered the place of their retreat, he takes with him his dog which he has trained to the sport, and sends him into the midst of the flock. As soon as the Turkeys perceive their enemy, they run with such swiftness as to leave the dog at a great distance behind: he still continues to follow them, knowing from experience that they must soon be tired, as they cannot run fast for any considerable time. At length he obliges them to take shelter in a tree, where, quite exhausted with fatigue, they sit till the hunter arrives, who, with a long pole, provided for that purpose, knocks them down one after the other.

Turkeys are furious among themselves, but extremely weak and cowardly against other animals which are less powerful than themselves. The common cock frequently makes the Turkey keep at a distance. Indeed the Turkey-cock will fly from the most contemptible animal that will venture boldly to face him. On the contrary, any thing that seems to fear him, he pursues with the insolence of a bully; particularly children and lap-dogs, to which he seems to have a peculiar aversion. After such an exploit, he returns to his female train, displays his plumage around, struts about the yard, and seems to glory in his valour.

The female seems to be of a milder disposition: she lays eighteen or twenty eggs, larger than those of a hen, which are whitish, and speckled, or rather freckled with dusky yellow spots. Though extremely tender when young, they become more hardy as they grow older, and attend the mother to considerable distances, in pursuit of insects, which they prefer to any other food; they are consequently not very expensive to the farmer.

Norfolk Turkeys are said to be the largest of this island, weighing from twenty to thirty pounds each. But in the East-Indies, where they are known only in their domestic state, they are often seen to weigh fifty or sixty pounds.

The Turkey expands its tail in the manner of a peacock: the neck and head are bare of feathers, and covered only with a purple or reddish skin,

which, when it assumes stateliness, swells, and is blown up, as it were, to a considerable size. It has a red fleshy appendix, or carbuncle, resembling a worm, upon the upper chap of the bill, which it can raise or contract at pleasure. The tail consists of eighteen feathers, and each wing has twenty-eight prime winged feathers. The legs have a kind of rudiment of spurs, which are very conspicuous. The flesh of a hen Turkey is sweet and delicate, and not inferior to that of a pullet; but that of a Turkey-cock is not so excellent.

"Most of our housewives," says a Swedish author on husbandry, "have long despaired of success in rearing Turkeys, and complained that the profit rarely indemnifies them for their trouble and loss of time: whereas, continues he, little more is to be done than to plunge the chick into a vessel of cold water, the very hour, or if that cannot be, the day it is hatched, forcing it to swallow one whole peppercorn, and then restoring it to its mother. From that time it will become hardy, and fear the cold no more than a hen's chick. After which it must be remembered, that these useful creatures are subject to one particular malady whilst they are young, which carries them off in a few days. When they begin to droop, examine carefully the feathers on their rump, and you will find two or three, whose quill part is filled with blood. Upon drawing these the chick recovers, and after that requires no other care, than what is commonly bestowed on poultry that range the court-yard.

"These articles are too true to be denied; and, in proof of the success, three parishes in Sweden have, for many years, gained several hundred pounds by rearing and selling Turkeys."

## NATURAL HISTORY of the PHEASANT.

**N**EXT to the peacock, the Pheasant is the most beautiful of birds, as well for the vivid colour of its plumes, as for their happy mixtures and variety. The pencil cannot represent any thing so glossy, so brilliant, or points so finely blending into each other. It is said, that when Cræsus, king of Lydia, was seated on his throne, adorned with all the pomp of Eastern splendour, he asked Solon if he had ever seen any thing so fine! The Greek philosopher, unawed by the objects before him, or priding himself in his native simplicity, replied, that after having seen the beautiful plumage of the Pheasant, he could be astonished at no other finery.

It is certainly a most elegant bird. The iris of the eye is yellow, and the eyes are surrounded with a scarlet colour, sprinkled with small black specks. On the fore part of the head there are blackish feathers mixed with a shining purple. The top of the head, and the upper-part of the neck are tinged with a darkish shining green. In some Pheasants the top of the head is of a shining blue, and the head and neck appear either blue or green, according to the situation of the spectator. The feathers on the breast, the shoulders, the back, and the sides, are blackish, with edges of a most exquisite colour, which appear either black or purple, according to the different light in which the bird is viewed; and under the purple there is a transverse streak of gold colour. The tail is about eighteen inches long, from the end of the middle feathers to the root: the legs, feet, and toes, are of the colour of horn. On the legs there are black spurs, which are shorter than those of a cock: two of the toes are connected by a membrane. The hen is not so beautiful as the cock, she being nearly of the colour of a quail: she lays eggs but once a year, which sometimes amount to eighteen or twenty in number.

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This bird is not only beautiful to the eye; it is also delicate when served up to the table; but, as if disdaining the protection of man, it has left him to take shelter in the thickest woods and the remotest forests. The cock, the turkey, the pintada, and all others of the domestic kind, when once reclaimed, have still continued in their domestic state, and persevered in the habits and appetites of willing slavery. But the Pheasant, though taken from its native warm and pleasant retreat, has still continued its attachment to native freedom, and now continues wild among us, making the most envied ornament of our parks and forests, where it feeds upon acorns, berries, and grain, the scanty produce of this cold climate.

But though, in the woods, the Hen-Pheasant lays from eighteen to twenty eggs in a season, yet, in a state of captivity, she seldom produces above ten. In the wild state, she hatches and rears up her brood with patience, vigilance, and courage; but when kept tame, she attends improperly to this duty, so that a hen is generally her substitute to sit for her. The Pheasant therefore had better be left at large in the woods, than be again reclaimed to captivity. When wild, its fecundity is sufficient to stock the forest; its elegant plumage adorns it; and unlimited freedom adds a finer flavour to its flesh.

Many have lately endeavoured to take these birds once more from the woods, and to keep them in places fitted for their reception. Like others of the poultry kind, they have but little sagacity, and are easily taken. At night they roost upon the highest trees of the wood; and come down by day among the brakes and bushes in search of food. In the winter their foot-steps may be traced in the snow, and they are frequently taken in springs. They are the most easily shot of any birds, for when they rise, they always make a whirring noise, which is a sufficient notice to the sportsman; and being a large mark, and flying very slow, the most indifferent gunner can hardly miss them.

When Pheasants are taken young into keeping, they become as familiar as chickens. The female, in her natural state, makes her nest of dry grass and leaves; therefore, when brought up tame, the same materials should be laid for her in the pheasantry, which she herself, in general, will dispose in a proper manner. If she neglects to sit upon her eggs, a common hen must be procured to hatch them, which task she will perform with perseverance and success. It is extremely difficult to rear the young ones, and care must be taken to supply them with ant-eggs, that being the food the old one leads them to gather when wild in the woods. In order to make these go the farther, they may be chopped up with curds or other provision. These birds, when young, require to be fed with great exactness, both with regard to quantity and time; and it is necessary sometimes to vary their food; wood-lice, ear-wigs, and other insects being occasionally very agreeable to them. The place in which they are reared, must be kept extremely clean, and their water should be changed two or three times a day: they should not be exposed in the morning till the dew is off the ground, nor suffered to remain abroad after sun-set. When they become adult, they are capable of shifting for themselves, and then they are remarkably fond of oats and barley.

When full-grown, the Pheasant seems to feed indifferently upon every thing that offers, and we are assured by a French writer, that one of the king's sportsmen shooting at a parcel of crows, which were gathered round a dead carcase, upon his coming up he saw, to his great surprise, that he had killed as many Pheasants as crows; but this account seems to be exaggerated, tho' it is admitted by other respectable writers that these birds are of a carnivorous disposition.

There are many varieties of the Pheasant as well as of all other domestic fowls. There are white Pheasants, crested Pheasants, and spotted Pheasants; but the golden Pheasant of China is the most beautiful of all others.

#### The HORNED INDIAN PHEASANT.

The size of this bird is between that of a hen and a turkey, and in shape it greatly resembles a turkey. The bill is brown; and on the fore-part of the head, and all round the eyes it is covered with a kind of blackish hair. The top of the head is red, and over each eye, pointing backwards, there is a horn of a callous substance. A flap of loose skin hangs down the fore-part of the neck, which is of a beautiful blue, with orange coloured spots. The neck and breast are reddish, inclining to orange, and the breast and lower part of the neck are spotted with white; each spot being encompassed with a black ring. The back, wings, tail and belly are of a yellowish brown, which gradually intermixes with the red round the bottom of the neck. The whitish spots on the backs, wings, tail, and belly, resemble pearl drops, the sharp ends being towards the head. These are all encompassed with black, and the thighs are brownish. It has spurs, and the legs and feet resemble those of a cock.

#### The RED CHINA PHEASANT.

This bird is somewhat smaller than the European Pheasant, and has a bill of a brownish colour. The feathers on the upper-part of the head are also brownish, but it has a very curious crest of long scarlet feathers hanging down on the back of the neck, and beautifully variegated with scalloped lines. The back is yellow, and the fore-part of the neck, breast, and belly, are of a beautiful red. The covert feathers of the wings are of a deep blue, interspersed with black spots; but the first row of the other feathers are spotted with brown on a yellow ground.

#### The WHITE CHINA PHEASANT.

This resembles the red China Pheasant in size and form, but it has a dusky yellow bill, with a curious crest of black feathers extending from the base of the bill to the upper-part of the head, and hanging down the hinder-part of the neck. The eyes are surrounded with a ring of white feathers, and that is encompassed with a fine scarlet circle, spotted with red. This also continues to the hinder part of the head. The neck, back, and wings are white, variegated with a few dark spots and shades; the breast, belly, and thighs are black; the feet are scarlet, and the claws are black.

#### The PEACOCK PHEASANT.

According to Mr. Edwards, this is also a Chinese bird. On the upper feathers of the wings there are blue spots like eyes, and the tail is spotted with green. Like the common cock, its legs are armed with spurs.

We are informed by Tertre that there is a bird called a Pheasant in the Caribbee Islands, which is extremely beautiful, and is as large as a capon; but it has longer legs, and its feet resemble those of a peacock. The feathers on the neck and breast are of a shining blue, and the back is of a brownish grey. The wings and tail are short, and entirely black. The flesh is as good as that of the European Pheasants.

#### The BRASILIAN PHEASANT.

This is rather smaller than the common hen, but the tail is broad and about twelve inches long. The plumage is principally black, intermixed with a little brown and white. It can at pleasure erect the black feathers on the head in the form of a crest.



crest. The upper-part of the neck is naked, having only a red skin on it. The lower-part of the body, and the hind-part of the wings are clothed with black and white feathers intermixed. The tail, and the upper-part of the legs are black, and the feet are of a beautiful red. It is also called by the natives Jacuperna, a name given to it on account of its cry, which is Jacu Jacu. This bird is easily tamed, and its flesh is esteemed good wholesome food.

#### NATURAL HISTORY of the GUINEA HEN, or PINTADA.

**T**HE Guinea Hen is about the size of a common hen, but as it has longer legs, it appears much larger. Its head is naked, its back is round, and its tail turns downwards like that of a partridge. The head is covered with a kind of helmet, and the whole plumage is black or dark grey, speckled with white. It has wattles which proceed from the upper lip, and not from the lower chap as in cocks. This gives it a very peculiar air, and its restless gait and odd chuckling sound, sufficiently distinguish it from all other birds.

The Guinea Hen came originally from Africa, but is now well known all over Europe. In different countries, however, it has different names. By some it is called the Barbary Hen; by others the Tamis Bird; and by others, the Bird of Numidia. We have given it the name of the Guinea Hen, because it was probably first brought to us from that part of Africa.

They are seen in vast flocks in many parts of their native country. All their habits are like those of the poultry kind, and they agree in every other respect, except that the male and female so exactly resemble each other, that they can hardly be distinguished. The only observable difference lies in the wattles, which in the cock are of a bluish cast; in the hen, they incline a little to a red. In our climate, they lay about five or six eggs in a season; but they are more prolific in their sultry regions at home. They are kept in this country rather for shew than use, as their flesh is not much esteemed, and great attention is required in rearing them.

The ears of the Guinea-Hen are placed behind the wattles, and are quite uncovered, but the apertures are very small. The feet are of a greyish brown, covered with large scales before; but there is only a rough skin behind, and the hinder toe is short.

#### NATURAL HISTORY of the BUSTARD.

**T**HIS is the largest land bird that is a native of Britain: it is much larger than the turkey, the male at a medium weighing twenty-five pounds. The breadth is about nine feet, and the length almost four. The male has a tuft of feathers about five inches long on each side of the lower mandible. The head and neck are ash-coloured; the back is barred transversely with black, bright, and rust colour. The greater quill feathers are black; the belly white; and the tail, which consists of twenty feathers, is marked with broad bars of red and black: the legs are of a dusky colour.

The female is about half the size of the male; the crown of the head is of a deep orange colour, traversed with black lines, and the rest of the head is brown. The lower part of the neck before, is ash-coloured. In other respects it resembles the male, only the colours of the back and wings of the male are brighter.

The Bustard was once much more numerous among us than it is at present; but the increased

cultivation of the country, and the extreme delicacy of its flesh, has greatly thinned the species. It would probably have been long since extirpated, but for its peculiar manner of feeding. Had it continued to seek shelter among our woods, it must have been destroyed in proportion as they were cut down. If in the forest, the fowler might approach it unobserved; and the bird, from its magnitude, would be so excellent a mark, that it could not easily be missed. But the Bustard now inhabits only the open and extensive plain, where it is plentifully supplied with food, and where every invader may be seen at a great distance.

These birds are frequently seen in flocks of fifty or more, in the extensive downs of Salisbury-Plains, in Newmarket and Royston Heaths, in Cambridgeshire, the Dorsetshire uplands, and so on as far as March or Lothian, in Scotland. They run very fast, and when on the wing, can fly slowly for several miles without resting; but they take flight with great difficulty, and are sometimes run down with grey-hounds. They generally keep near their old haunts, seldom wandering above twenty or thirty miles. Their food consists of the berries which grow among the heath, and those large earth-worms that appear in great quantities on the downs, before sun-rising in the summer. These being replete with moisture answer the purpose of liquids, and enable them to remain a long time without drinking, on those dry and extensive tracts. But, as a security against drought, nature has furnished the males with a pouch, the entrance of which lies immediately under the tongue, and which will contain near seven quarts; and this they probably fill with water, to supply the hen when sitting, or the young till they can fly.

Like other birds of the poultry kind, Bustards change their mates at the season of incubation, which is about the latter end of summer. They make their nests upon the ground, by scraping a hole in the earth, and sometimes lining it with a little straw or grass. They lay only two eggs, which are about the size of those of a goose, of a pale olive brown with dark coloured spots. They are about five weeks in hatching, and the young ones run about the instant they are out of the shell.

These birds live about fifteen years; but they cannot be propagated in a domestic state, as they cannot then be supplied with a sufficiency of that food which they principally delight in.

There are also Bustards in France, which appear in large open plains, particularly near Chalons, where, in the winter, vast numbers of them assemble; one of which is always placed as a centinel, on an eminence at a distance from the flock, to give notice of the smallest appearance of danger.

#### The INDIAN BUSTARD.

This bird is about twenty inches in length, and slenderer in proportion than any bird of this kind. The bill is of a whitish colour, and longer than those of our English Bustards. The sides of the head are of a bright brown, but the top of the head, and the whole neck, are covered with black feathers hanging loosely. The back, rump, and tail, are of a light brown. On the tail are transverse black bars. All the covert feathers of the wings are white, except that the smaller ones about the joint are edged with black. The greater wing feathers nearest the back, are brownish, spotted with black, and the middle quills are white, with transverse bars speckled with black. The greater quills are white on their outer webs, and the tips gradually become of a dark ash-colour. The whole of the under side, from the breast to the tail, is clothed with black feathers. The legs are long, and the toes short; the legs are also bare a considerable distance



tance above the knee. The toes are three; all pointing forward, as in other birds of this kind, and are covered with whitish scales, but the claws are dusky.

This bird is an inhabitant of Bengal, in the East-Indies, and was first described by Mr. Edwards, who took it from a drawing in the possession of Dr. Mead.

#### The LITTLE BUSTARD.

The Little Bustard is about the size of a pheasant. The bill is of a flesh-colour at the base, and black at the point: the head, the back part of the neck, the back, and the covert feathers on the wings, are brown, marked with irregular spots of black. The throat is white, and the fore-part of the neck of a lightish brown, with a dusky mixture. The covert feathers on the inside of the wings, and the ridges of the wings are white; the outer quills are white at the bottom, but black at the points. The breast and sides are white, spotted with black, and the belly and thighs wholly white. The feathers of the tail are brown, speckled with very small spots of white, and barred with transverse black lines. It has only three toes, which all stand forwards, and the legs and feet are covered with yellow scales.

#### NATURAL HISTORY of the COCK of the WOOD.

**T**HE female is called the hen of the wood. This species is found in no other part of Great-Britain, than on the northern islands of Scotland, and even there it is not often seen. It was formerly found in Ireland, but the breed now appears to be extinct there. It inhabits woody and mountainous countries; particularly forests of pines, birch-trees, and junipers; feeding on the tops of the former, and the berries of the latter, which sometimes give the flesh such a flavour, that it is hardly eatable. It seldom lays more than six or seven eggs, which are white, marked with yellow, and about the size of a common hen's egg.

The length of the male is about two feet eight inches, and the breadth three feet ten inches, and often weighs fourteen pounds. The female is smaller, not exceeding twenty-six inches in length, and forty in breadth. The male and female also differ greatly in colour: the colour of the bill of the male is a pale yellow; the nostrils are covered with dusky feathers; the head, neck, and back, are elegantly marked, slender lines of grey and black running transversely. The feathers are long on the hind part of the head, and there is a large tuft of long feathers beneath the throat. The upper-part of the breast is of a rich glossy green; the rest of the breast and belly is black, intermixed with white feathers. The coverts of the wings are crossed with undulated lines of black and reddish brown: the exterior webs of the greater quill feathers are black, with a white spot at the setting on of the wings. The tail consists of eighteen feathers, the middle of which is the longest; they are black, spotted with white on each side: the legs are very strong, covered with brown feathers.

The bill of the female is dusky, the throat red; the head, neck, and back, marked with transverse bars of red and black: on the breast are some white spots, and the lower part is of a plain orange colour: the tail, which is of a deep rust colour, is barred with black. She usually lays her eggs in a dry place, and on mossy ground. During the time of incubation, when she is obliged to leave her eggs in quest of food, she covers them up so judiciously with moss, or dry leaves, that it is no easy matter to discover them. As soon as the young are hatched,

they run after the mother with great agility, though sometimes they are not entirely disengaged from the shell. The hen leads them forward into the woods, shews them the ants eggs, and the wild mountain berries, which are their principal food while they are young. The strength of their appetites increases with their age, and as they advance in both, they feed upon the tops of hether, and the cones of the pine-tree. Thus they soon arrive to perfection; and as they are hardy birds, and their food continually before them, it might naturally be supposed they would increase abundantly; but the contrary is the truth; their numbers are reduced by rapacious birds and beasts, and still more by contests among rivals.

The whole brood follows the mother for about a month or six weeks, when the young males entirely desert her, and live together in great harmony till the beginning of spring. At this season they begin to feel the genial access, and a period is put to all their former friendships. They, for the first time, consider each other as rivals, and the fear of rivalry totally extinguishes the spirit of society. They attack each other with the fury of game-cocks, and are at that time so inattentive to their own safety, that two or three of them are sometimes killed at a single shot.

#### NATURAL HISTORY of the BLACK COCK.

**T**HIS is also called the heath-cock, and black game. Like the former, these birds delight in woody and mountainous situations. In summer they feed on bilberries, and other mountain fruits, and in the winter on the tops of the heath. This species, and the cock of the wood, are frequently seen in the woods, perching like the pheasant. In the summer they frequently descend from the hills to feed on corn: they never pair, but, in the spring, the male takes his station upon some eminence, where he crows and claps his wings: this signal is a sufficient summons for every female within hearing. The hen usually lays about six or seven eggs. At the beginning of winter, the young males forsake their mother, and remain in flocks of seven or eight till spring; at which time they inhabit the woods. Like the cock of the wood, they are then very quarrelsome, fight together like game-cocks, and are so entirely off their guard, that they may easily be shot.

The Black Cock is about one foot ten inches in length, and two feet nine inches in breadth, and weighs almost four pounds: the bill is dusky; the plumage of the body is black, glossed with a shining blue over the neck and rump. The coverts of the wings are of a dusky brown. On the thighs and legs are dark brown feathers, with white spots on the former: the tail is forked, and consists of sixteen black feathers. The feathers under the tail, and the inner coverts of the wings are white. The female does not exceed two pounds in weight; she is about eighteen inches in length, and two feet six inches in breadth. The head, neck, and breast, are marked with alternate bars of black and dullish red. The back, coverts of the wings, and tail are of the same colours, but the red is deeper. The tail, which is a little forked, consists of eighteen feathers, variegated with red and white.

#### NATURAL HISTORY of the GROUS.

**T**HIS bird is also called the moor-cock, or the red game. It is about one third larger than the partridge, and the colour resembles that of a woodcock, but is somewhat redder. It has a small head,



head, a slender body, a short black bill; the throat is red; the plumage on the head and neck is of a tawny red: the back and scapular feathers are of a deeper red, with a large black spot on the middle of each feather: the breast and belly are of a dullish brown, inclining to purple, crossed with several narrow dusky lines. The female is smaller, and her colours are duller than those of the male. The breast and belly are spotted with white, and the tips of some of the coverts of the wings are also white. These birds build their nests upon very low trees or shrubs, and lay from six to ten eggs, which are white, with a greenish cast, and speckled with reddish spots. The young brood follows the hen the whole summer: in the winter they join in flocks of about forty or fifty, and become remarkably shy and wild: they generally keep on the tops of the hills, and are seldom found on the sides, or in the valleys; their food is the mountain berries, and the tops of heath. They strike with their bill like a hen, and fly with their feet hanging down.

#### NATURAL HISTORY of the PTARMIGAN.

MR. Brisson joins this bird with the white partridge of Mr. Edwards, but these are two very different birds. The Ptarmigan is either of a pale brown or ash-colour, mottled with dusky spots. The tail of the Ptarmigan consists of sixteen feathers; the two middle of which are ash-coloured, mottled with black, and tipped with white; the two next are black, with a slight mark of white at their ends. These birds are found in this island only in the Scottish Highlands: their weight is about fourteen ounces, their length thirteen inches and three quarters, and their breadth twenty-three inches. Their feet are cloathed with feathers to the claws: the nails are long, broad, and hollow: the first circumstance guards them from the rigour of the winter, and the other enables them to form a lodge under the snow, where they lie in heaps, to protect themselves from the cold.

#### NATURAL HISTORY of the PARTRIDGE.

THE Partridge may be said to be the property of the sportsman; the British laws have even taken it under their protection; and, like a peacock or a hen, it may be considered as a private property. The only difference is, that the Partridge is fed in our farms, and the others in our yards: the former have it in their power to change their master, by changing their habitation, and the latter are contented captives.

In England, the Partridge is a favourite delicacy at the tables of the rich; and the desire of keeping it to themselves, has induced them to procure such laws for its preservation, as do not seem to harmonize with the general spirit of legislation. By an act passed in the tenth year of the reign of his present majesty, any person who shall wilfully take, kill, or destroy any pheasant or Partridge, or use any gun, dog, snare, net, or other engine for that purpose, in the night, between one hour after sun-setting, and one hour before sun-rising, shall for the first offence be committed to gaol, or the house of correction, for any time not exceeding six months, nor less than three; and for every such subsequent offence, for any time not exceeding twelve months, nor less than six: and shall also within three days after commitment for the first or any subsequent offence, be once publicly whipped in the town, &c. where such gaol or house of correction shall be, between the hours of twelve and one in the day.

What can be more arbitrary than to talk of pre-

serving the game, which can have no other meaning than that the inferior people shall abstain from what the rich have taken a fancy to keep for themselves? If Partridges and pheasants, like common cocks or hens, could be made legal property, be taught to keep within certain districts, and to feed only on those grounds which belong to the man whose entertainments they improve, it might then, with some appearance of justice, be admitted, that a man who fed them had a right to claim them: but, the case is otherwise: they feed every where, and upon every man's ground. Those birds which are nourished by all, by the law of reason belong to all; nor can any one man, or any body of men, claim any exclusive right to them, while they continue in a state of nature.

It is said in our old law books of authority, that all wild animals, such as deer, hares, foxes, and the like, are those which on account of their swiftness, or fierceness, fly the dominion of man; and in those no person can have a property, unless they are tamed, or reclaimed by him. Hence it appears, that, by the common law, every man hath an equal right to such creatures as were not naturally under the power of man; and that the mere capture or seizure of them, created a property in them.

The immense quantity of game about the environs of Paris, has been considered as a badge of the slavery of the people; and yet the French have no game laws for the remoter parts of the kingdom: the game is indeed preserved for the king in some few places, but is free in almost every other part of France. In England the prohibition is general; and the peasant, or even the farmer, cannot possess what even slaves in other countries are entitled to.

The cock Partridge weighs about fifteen ounces, the female thirteen: the bill is white, and the crown of the head is brown spotted with reddish white. The cheeks and forehead are of a deep orange colour, but much paler in the males than in the other sex. The neck and breast are beautifully marked with narrow undulated lines of ash-colour and black; and in the hind part of the neck is a strong mixture of rust colour. On the breast of the male there is a broad mark in the shape of an horse-shoe, of a deep orange hue. On the back, each feather is marked with several semi-circular lines of black and reddish brown: the greater quill feathers are dusky, spotted with pale red upon each web. It has eighteen feathers in the tail, the six outermost on each side being of a bright rust colour; the others are marked with irregular lines of black and pale reddish brown. The legs are whitish.

The partridge is found in every country, and in every climate; as well in the frozen regions about the Pole, as the torrid tracts under the Equator. Wherever it resides, it appears to adapt itself to the nature of the climate. In Greenland, it is brown in summer; but when the icy winter appears, it has a new covering suited to the season: its outward plumage then assumes the colour of the snows, amongst which it seeks its food, and it is cloathed with a warm down beneath. Thus by the warmth, and the colour of its plumage, it is doubly fitted for the place; the one defending it from the cold, and the other preventing it from being noticed by the enemy. The Partridges of Barakonda are longer legged and swifter footed; and seek a residence in the highest rocks and precipices.

All naturalists agree that the Partridge is immoderately addicted to venery. Those who are excited by curiosity to be more particularly informed concerning this particular, we beg leave to refer to Pliny, lib. x. c. 23, and Edwards's preface to *Gleanings*, part 2.

Their manners and habits, in other respects, resemble all those of the poultry kind; but their cunning and instincts seem superior to those of the larger kinds.



kinds. Living in the very neighbourhood of their enemies, they have perhaps more frequent occasion to put their little arts in practice, and learn, by habit, the means of evasion or safety. Whenever a dog or any other formidable animal, approaches the nest of a Partridge, the hen practises every art to draw him away. She keeps at a little distance before him, feigning to be incapable of flying; and just hopping up and falling down before him; but never going to so great a distance as to discourage her pursuer. At length having entirely drawn him away from her secret treasure, she at once takes wing and disappears.

The danger being over, and the dog withdrawn, she calls her young, who immediately assemble at her cry, and follow her. They are usually from ten to fifteen in a covey. A Partridge will live from fifteen to seventeen years, if unmolested. Partridges, properly speaking, make no nest, being satisfied with laying their eggs upon the ground, where they find a little hay or straw. The eggs are of a greyish colour, with a yellowish cast, and have a pretty hard shell. There is a bird of this kind called the red Partridge, which is rather larger than that above mentioned, and perches upon trees. That which we have particularly described above, is what we are best acquainted with in England, and always keeps upon the ground.

The places that Partridges most delight in, are corn-fields, especially while the corn grows; for that is a safe retreat, where they remain undisturbed, and under which they usually breed. They frequent the same fields after the corn is cut down, and that with another intent; for they then feed on the corn that has fallen from the ears, and find a sufficient shelter for them under covert of the stalks, especially of those of wheat stubble. When the wheat-stubble is much trodden by men or beasts, they retire to the barley-stubble, and will there hide themselves in coveys of ten or fifteen. When the winter comes on, and the stubble-fields are trodden down or ploughed up, they then retire to the upland meadows, where they lodge in the high grass, and among rushes; sometimes they resort to the low coppice-woods, especially if there are corn lands near them.

#### The HUDSON'S-BAY PARTRIDGE.

This Partridge is not much unlike those in England with regard to the shape of the head, but its bill is shorter and blunter. It has small red combs over the eyes, and the shape of its body resembles that of a pigeon, but it is considerably larger. When the snow is on the ground, they feed on the buds of poplar. They run like an English Partridge, and in the summer they are nearly of the colour of our Partridges; but in the winter they are white, excepting only the large tail feathers, which are tipped with black. They moult these white feathers in the spring, and resume the brown ones against the summer season.

#### The MOUNTAIN PARTRIDGE of JAMAICA.

The length of this bird, from the tip of the bill to the end of the tail, is ten inches, and the breadth, when the wings are extended, about sixteen. The head is small, and the bill like that of a pigeon. The upper-part of the body is of a reddish purple-colour, the lower-part is lighter, and under the belly it is whitish. The iris of the eyes is yellow, and the eye-lids are of a beautiful red. The legs and feet are red, like those of pigeons, and are about two inches long. It feeds upon berries, and is usually found among the mountains. It generally makes its nest in low trees, with twigs placed transversely, and lined with hair and cotton, for the better preservation of the eggs, and that the young may repose upon a soft bed.

#### The MOUNTAIN PARTRIDGE of HER- NANDEZ.

This is larger than our Partridge, and the bill and feet are of a bright red colour. The whole body is clothed with a mixture of brown, pale and dusky yellow. The wings underneath are of an ash-colour, but they are speckled above with tawny white and yellow spots.

There is another bird called the Partridge of Damascus, which is smaller than the common Partridge, though the bill is longer. In other respects they strongly resemble each other.

The red Partridge of Aldrovandus is about twice the size of those of our own country, being equal in magnitude to a common hen. It has a red bill and legs, and is spotted on the breast and sides like ours; but the head, neck, breast, and rump, are chiefly ash-colour. This bird is a stranger in England, but is to be met with in the islands of Jersey and Guernsey.

#### NATURAL HISTORY of the QUAIL.

THE Quail is not above half the size of a partridge: the length is seven inches and an half, the breadth fourteen. The feathers of the head are black, edged with ~~very~~ brown: the crown of the head is divided by a pale yellow line; beginning at the bill, and extending to the back; above each eye there is another line of the same colour: the chin and throat are whitish: the breast is of a pale yellowish red, spotted with black. The scapular feathers, and those on the back, are marked with a long pale yellow line in the middle; and with iron-coloured and black bars on the sides. The coverts of the wings are of a reddish brown, elegantly barred with paler lines; bounded on each side with black. The tail, which consists of twelve short feathers, is barred with black, and very pale brownish red. The legs are of a palish hue. In its habits and nature it resembles all others of the poultry kind, except that it is a bird of passage.

When we consider the heavy manner of its flying, and its dearth of plumage in proportion to its corpulence, it appears surprizing that a bird, so apparently ill qualified for migration, should venture to take extensive journeys: but, however extraordinary, it is certainly a bird of passage. Bellonius assures us that when he went from Rhodes to Alexandria, about autumn, several Quails, flying from the north to the south, were taken in his ship; and sailing at spring time the contrary way, from south to north, he observed them on their return, when many of them were taken in the same manner. This account is confirmed by the testimony of many others, who assert that they choose a north wind for these adventures; the south being very unfavourable, as it retards their flight by moistening their plumage.

But though it is universally admitted that the Quail is a bird of passage, it still remains a doubt whether they take such long journeys as Bellonius has made them perform. Some have lately asserted that it only migrates from one province of a country to another. In England, for instance, it flies from the inland counties, to those bordering on the sea, and remains there all the winter. If they are driven out of the stubble-fields or marshes by frost or snow, they retreat to the sea-side, take shelter among the weeds, and live on what the sea casts upon the shore. The time of their appearance upon the coasts of Essex, exactly coincides with their disappearance from the more internal parts of the kingdom. Mr. Pennant says, "They are birds of passage; some entirely quitting our island, and others shifting their quarters:" It is therefore probable



bable that the account which Bellonius has given us may be strictly true; and the assertions which others have made that they sometimes only migrate from one province of a country to another, may equally deserve to be credited.

The Quail is not so prolific as the partridge; seldom laying more than six or seven eggs, which are whitish, marked with irregular rust-coloured spots. This bird is easily taken, and may be en-

ticed any where by a call. Quail-fighting, among the Athenians, was a favourite amusement: they abstained from the flesh of this bird, deeming it unwholesome, as it was supposed to feed on hellebore; but they staked sums of money on them, as we do with regard to game-cocks, upon the success of the combat. At present, however, the courage of this bird is disregarded, but its flesh is considered as a very great delicacy.

## C H A P. III.

Containing the NATURAL HISTORY of BIRDS of the PIE KIND, viz. the RAVEN, the CROW, the ROOK, the CHOUGH, the JACK-DAW, the MAGPIE, the JAY, the CHATTERER, the BENGAL JAY, the BLUE JAY, the ROLLER, the INDIAN PIE, the RED-BEAKED TOUCAN, the PIE, the WOOD-PECKER, the BIRD of PARADISE, the CUCKOO, the PARROT, and the PIGEON.

**I**N the class of the Pie kind we shall marshal a numerous irregular tribe, variously armed, with different pursuits, appetites and manners; not formidably formed for war, though generally delighting in mischief; not usefully obedient, and yet without any determined enmity to the rest of their fellow tenants of the air. In short, under this class of birds we may arrange all that noisy, restless, chattering tribe, that, from the size of the raven down to that of the wood-pecker, flutter round our habitations, and, with the spirit of pilferers, make free with the fruits of human industry.

This is the class of birds which contributes the least to furnish out the pleasures, or supply the necessities of man. The falcon hunts for him, the poultry tribe supply his table with delicacies; and the sparrow race delight him with their warblings. The crane kind make a variety in his entertainments; and the tribe of ducks are not only delicate in their flesh, but many of them furnish valuable feathers. But, in the class of birds of the Pie kind, the pigeon is almost the only one that is useful in any respect. Like faithless servants, they are fond of the neighbourhood of men, because they live chiefly by his labour; their business is to plunder in his absence, and their deaths make him no atonement for their depredations.

But though this class is rather noxious than beneficial to man; yet with respect to each other, no class of birds are so well fitted for society: they are the most industrious, the most faithful, the most constant, and the most connubial. The rapacious kinds discard their young before they are able to struggle with adversity; but the Pie kind cherish them to the last. The poultry class are faithless and promiscuous in their amours; but these are perfectly wedded, and preserve their faith inviolate. They live in harmony with each other, and transmit an unpolluted race to posterity. The male assists in the labours of building the nest, and frequently relieves his mate in the time of incubation, by taking her place in the nest while she yields to the earnest solicitations of hunger. When the young of this class are excluded from the egg, the male and female are equally active in providing food for them.

These birds are as remarkable for their instincts, as for their capacity to receive instruction: cunning and archness is observable in the look of the whole tribe; and ravens and crows are taught to fetch and carry with the docility of a spaniel.

In this extensive class, however, it is not to be supposed that the manners are alike. The pigeon is gentle and serviceable to man; others are noxious, capricious, and noisy. But they all agree in

a few general characters; in having hoarse voices, slender active bodies, and a facility of flight that baffles the boldest of the rapacious kinds in the pursuit.

### NATURAL HISTORY of the RAVEN.

**T**HE Raven is larger than the carrion crow, or the rook, and is not only distinguished from them by its size, but by its bill being somewhat more hooked than those of the other two. It weighs about three pounds; it is two feet two inches in length, and four in breadth, when its wings are extended. The bill is strong and thick; and the colour of the whole bird is black, finely glossed with deep rich blue; except on the belly, which is dusky.

The Raven is to be found in every region of the world; for, being strong and hardy, it is uninfluenced by the changes of the weather. It bears, with equal indifference, the heat of the line, or the cold of the polar countries. While other birds seem numbed with cold, or pining with famine, the Raven is active and healthy; busily employed in prowling for prey, or sporting in the coldest atmosphere. Though black as a Raven is proverbial, yet it is sometimes found of a pure white; owing perhaps to the rigorous climates of the north. This change is wrought upon the Raven, as upon most other animals in that part of the world, where their robes, especially in winter, assume the colour of the country they inhabit.

The Raven is capable of being taught to perform almost any thing within the compass of any bird's abilities. He may be instructed in the art of fowling like an hawk; and, like a spaniel, he may be taught to fetch and carry. He may indeed be taught to speak like a parrot; and Dr. Goldsmith assures us he can be taught to sing like a man. "I have heard," says he, "a Raven sing the Black-joke with great distinctness, truth, and humour."

Taken as a domestic bird, the Raven has many qualities that render him extremely amusing. Active, curious, and impudent, he goes every where, pries into every thing, runs after the dogs, plays tricks with the poultry, and with great skill and address even gets into the good graces of the cook-maid; truly sensible of her ability to reward him for his attachment to her. By nature a glutton, and, by habit, a thief. Not confined to petty depredations on the pantry or the larder, like a miser he hoards what he can neither exhibit or enjoy. A ring, a tea-spoon, a piece of coin, or any glittering bauble, are always tempting baits to his avarice; these he

will



will watch an opportunity to pilfer, and carry them to his magazine of curiosities.

The Raven, in its wild state, is a voracious plunderer. He is not delicate in the choice of his food, but, whether his prey be living, or dead and putrid, he greedily falls to; and, after having sufficiently gorged himself, flies to acquaint his companions that they may participate of the spoil. If the carcass should happen to be already in the possession of a fox, a dog, or any animal more powerful than himself, he sits at a little distance, an humble spectator till they are satisfied. If he can discover no carrion, which, from his exquisite scent he can smell at a vast distance, he then contents himself with fruits, insects, and the accidental produce of the dunghill.

Ravens usually build in trees, and lay five or six eggs, which are of a palish green colour, spotted with brown. They are very numerous in the environs of large cities or towns; and are held in the same sort of veneration as the vultures are in Egypt, and for the same reason; for devouring the carcasses and filth, which would otherwise prove a nuisance. But they do not always fix their retreat near towns; they often build in unfrequented places, and drive all other birds from their vicinity. They will not even suffer their young to remain in the same district, but oblige them to depart, as soon as they are able to provide for themselves. Martin assures us, in his description of the Western Isles, that there are three little islands among the number, which are occupied by a pair of Ravens each, that will not suffer any other birds to reside among them.

A vulgar respect is paid to the Raven, as being the bird appointed by heaven to feed the prophet Elijah, when he fled from the rage of Ahab. The Romans, who thought this bird ominous, paid it the most profound veneration, from motives of fear. Linnæus informs us that the Swedes look upon Ravens as sacred birds, and no person attempts to kill them there. In the south part of Sweden, they fly to a great height, when the weather is serene; at which time they have a very singular cry that may be heard at a vast distance.

Pliny informs us that a Raven which had been kept in the temple of Castor, flew down into the shop of a taylor, who was highly pleased with the visits of his new acquaintance. The taylor taught him several tricks, and also to pronounce the name of the emperor Tiberius, and the whole royal family. He was beginning to grow rich from the presents he received of those who came to see this wonderful Raven, till an envious neighbour killed the bird, and deprived the taylor of his future hopes of fortune. The Romans, however, punished the man for thus injuring the taylor; and honoured the Raven with a magnificent funeral.

Of all birds, the Raven is most remarkable for longevity. We cannot easily credit what Hesiod asserts, that a Raven will live nine times as long as a man; but it is certain that some of them have been known to live an hundred years: indeed, if great exercise, and a good appetite is conducive to long life, the Raven enjoys both in a superlative degree.

The Raven was consecrated to Apollo, because it was thought to have a natural instinct to foretel futurity. Ovid says, that the Raven was once whiter than doves or swans; but that, on account of its immoderate loquacity, it was changed to black.

#### NATURAL HISTORY of the CROW.

**T**HE Crow resembles the raven in the form of its body, its appetites, its laying, and the manner of bringing up its young. It will feed on car-

tion, or any other filth, and when that is not to be obtained, it contents itself with grain and insects. Like the raven, it will pick out the eyes of young lambs when they are just dropped. It only differs from that bird in being less bold, less docile, and less favoured by mankind. England produces more birds of this kind than any other country in Europe. They were grown so numerous, and thought so prejudicial to the farmer, in the time of Henry VIII. that they were considered as an evil worthy of parliamentary redress. An act passed in the twenty-fourth year of his reign for their destruction, in which rooks and choughs were also included. Every hamlet was to provide Crow-nets for ten years; and, during that space, all the inhabitants were obliged to assemble at certain times, to consult the properest method of extirpating them.

Though the Crow abounds in England, yet it is so uncommon in Sweden, that Linnæus mentions it only as a bird that he once knew killed there. It lays about the same number of eggs as the raven; and they are of the same colour. Both of these birds are sometimes found white or pied. The length of the Crow is about eighteen inches, the breadth two feet two inches, and the weight about twenty ounces.

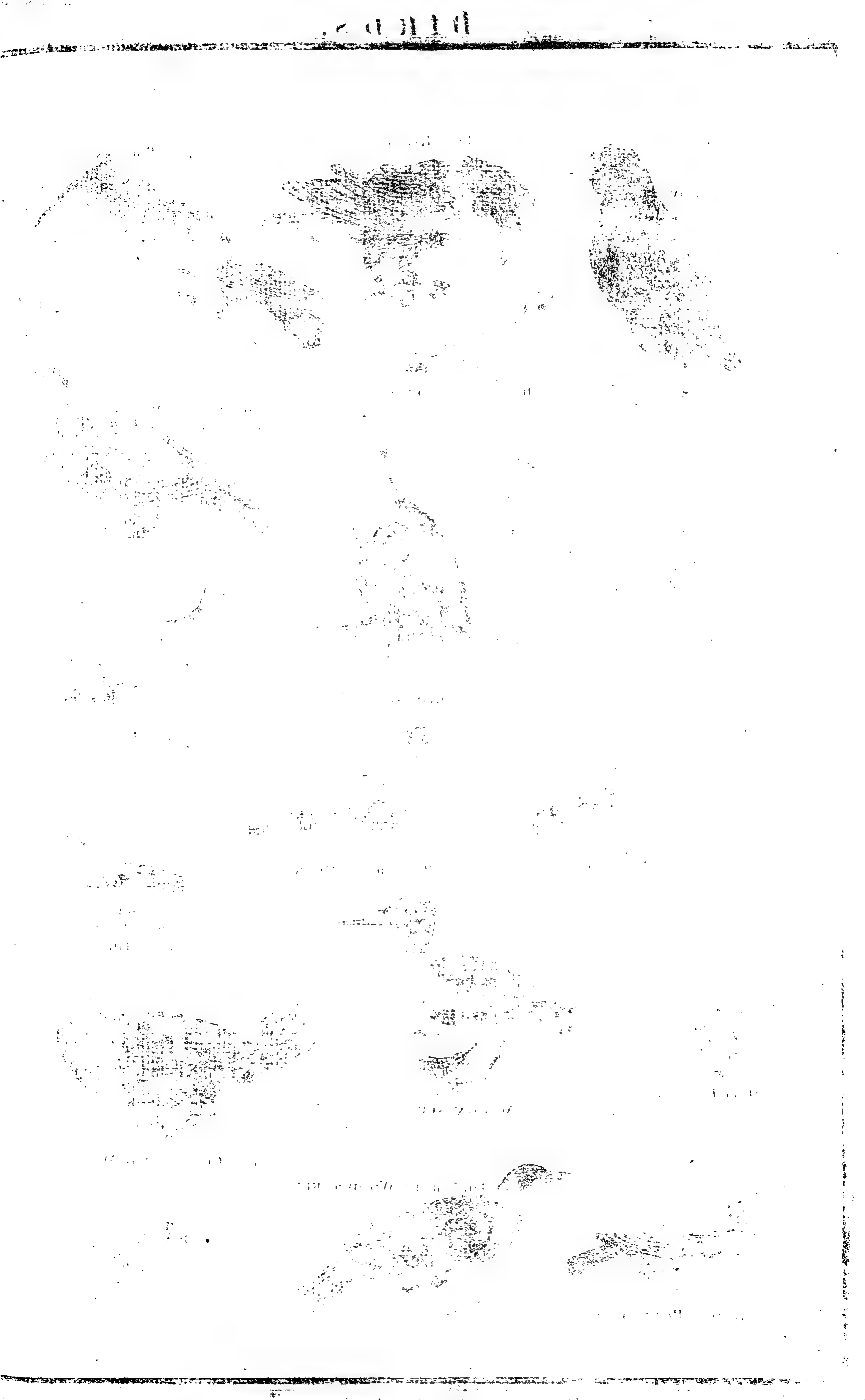
#### NATURAL HISTORY of the ROOK.

**I**N its form, the Rook differs but little from the carrion crow, but it is rather larger: the colours in each are the same, the plumage of both being glossed with a rich purple. What principally distinguishes the Rook from the crow, is the bill; which, by being frequently thrust into the ground to fetch out grubs and earth-worms, is bare of feathers as far as the eyes, and appears of a whitish colour. This distinction is the more necessary to be pointed out, as the Rook has but too frequently suffered for its similitude to the crow; and thus an harmless bird, that has no carnivorous appetites, and feeds only upon corn and insects, has been destroyed for another that feeds upon carrion, and frequently makes great havock among young poultry. The Rook, instead of being proscribed, should be treated as the farmer's friend, as it destroys his caterpillars, which would otherwise do incredible damage by eating the roots of the corn.

Rooks are sociable birds, living in vast flocks: they build in woods and forests in the neighbourhood of man, and sometimes make choice of groves in the middle of large towns or cities, for the place of their retreat and security. We had an instance of this even in the metropolis of England: not many years ago they formed a colony in the lofty trees in the Middle-Temple, where they passed as inoffensive a life as the other inhabitants of the Temple of the black robe. In these aerial cities they establish a kind of legal constitution, and exclude all intruders, none being suffered to build among them but acknowledged natives of the place. At the commencement of spring, the Rooks begin to build their nests; one bringing materials, while the other watches the building, lest it should be plundered by its brethren. All the old inhabitants, however, are already provided with nests; that which served them for years before, requires only a little trimming and dressing, to make it answer all the purposes of a new habitation. The young ones indeed are unprovided with a nest, and are obliged to build one as well as they are able. The male and the female, upon this occasion, pass several days in attentively examining the trees of the grove, before they fix upon a branch which seems proper for their purpose. The situation being pitched upon, they begin to gather the materials for their nest; the out-

side







# BIRDS.

THE CARRION CROW



THE ROOK



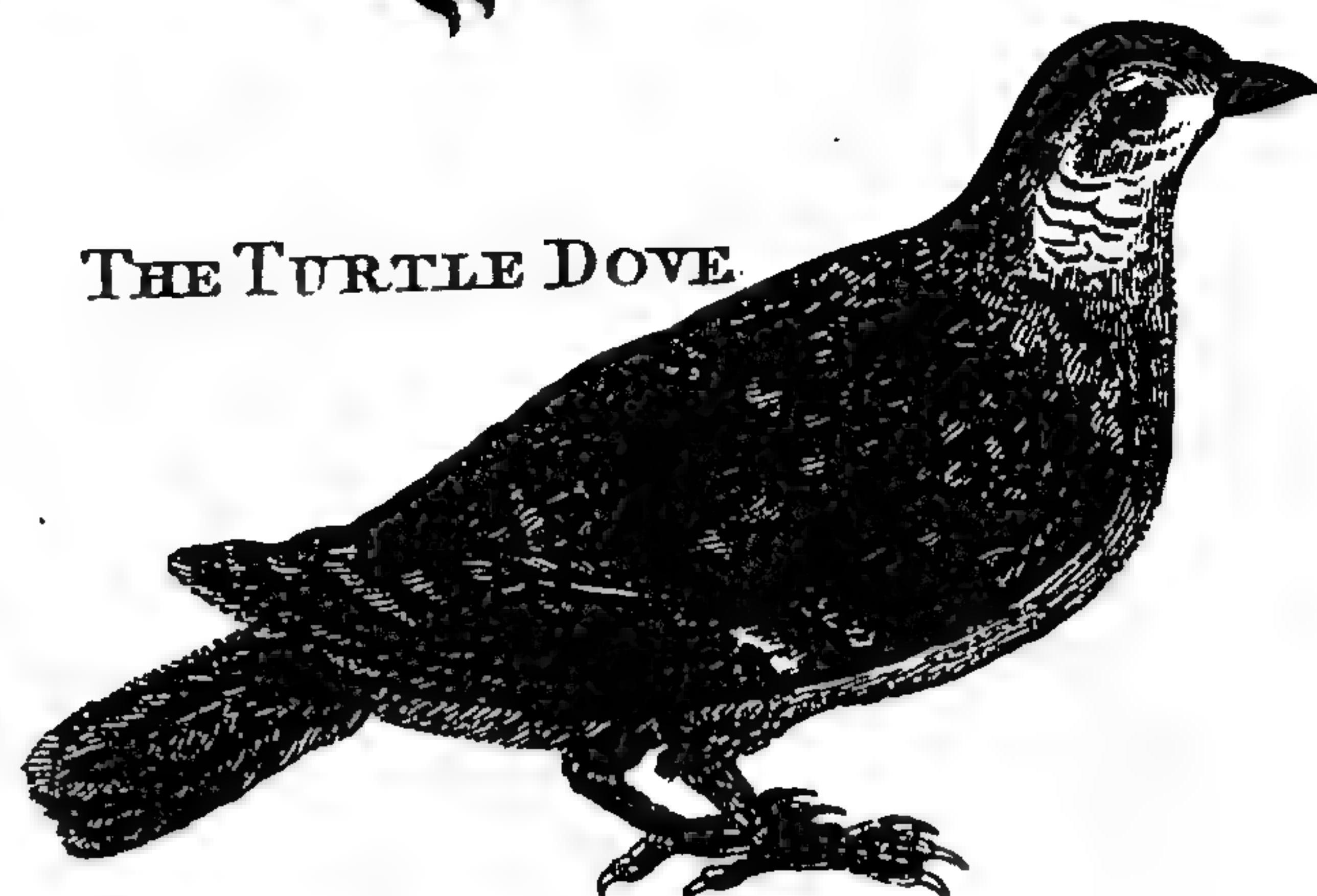
THE TOUCAN



THE LAGOPUS



THE TURTLE DOVE



THE WOOD PIGEON



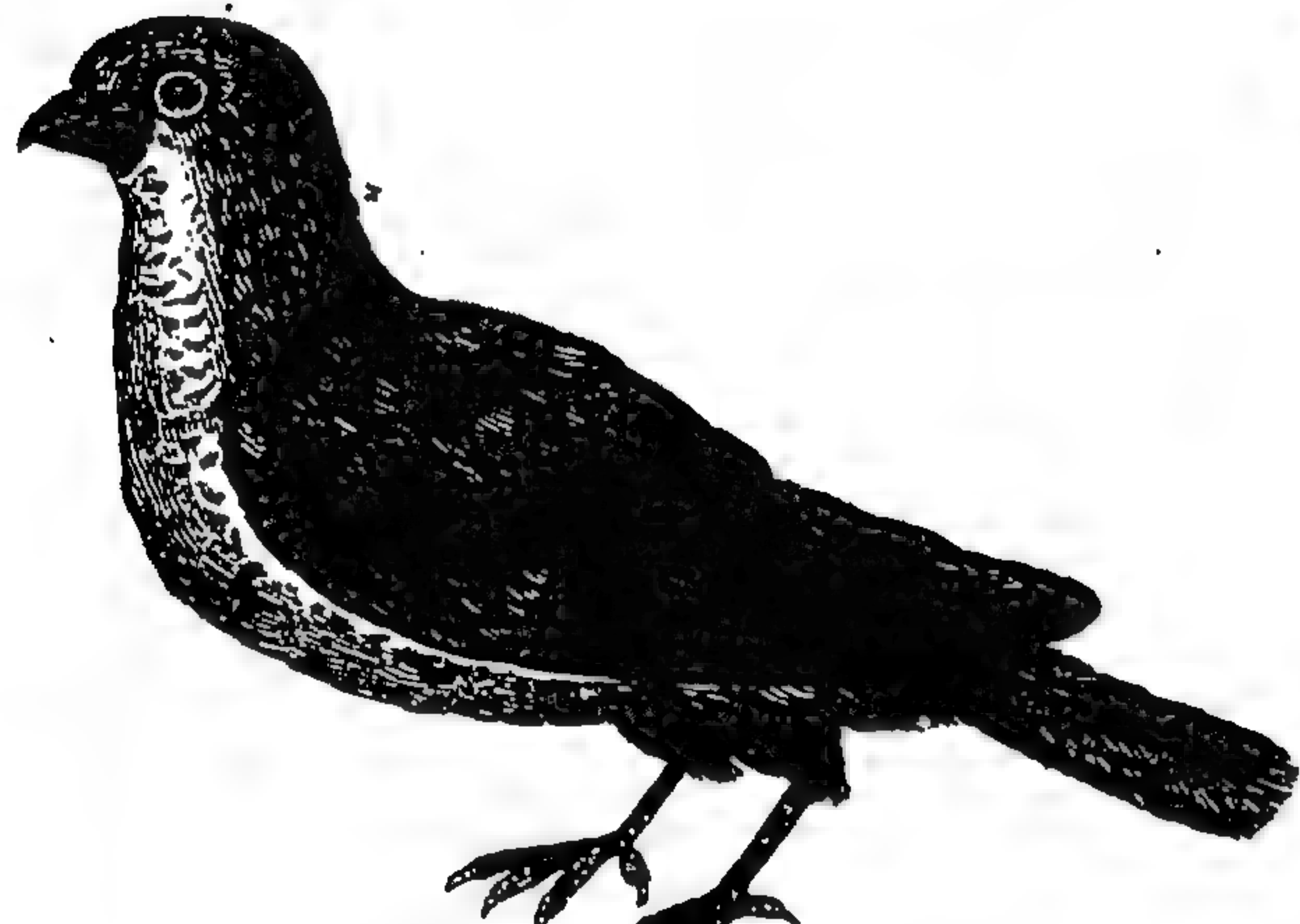
THE GROWSE



THE CROSS BEAK



THE LESSER BUTCHER BIRD



THE CROSS BEAKE



THE DAKER HEN



THE GREAT PLOVER



MERGANSER



THE COCK OF THE WOOD



THE GREEN WOODPECKER



THE GARRULUS BOHENISCUS



THE RED LEG D PARTRIDGE





side consisting chiefly of sticks, and the inside is usually lined with fibrous roots; the whole being regularly and substantially disposed. Sometimes the young couple give offence by making choice of a place too near the mansion of an older pair; a quarrel consequently ensues, and the old ones are always victorious.

Thus expelled, the young couple deliberate and examine as before, and, having taken care to keep their due distance, they again begin to build, and, in the space of three or four days, they usually complete their nest. Though they have frequent skirmishes, all hostilities are at an end as soon as the female begins to lay: not one of the whole grove, that treated her roughly but a little before, will now attempt to molest her. Though native Rooks are sometimes treated with severity by each other; yet, if a foreign Rook should attempt to make himself a denizen of their society, he must expect no favour; the whole grove would immediately be up in arms against him, and drive him from the premises of which they had possessed themselves.

Rooks, in some countries, are considered as a benefit, in others a nuisance; but they are generally supposed to do as much service by destroying noxious insects, as they do injury by consuming the grain of the husbandman. They lay the same number of eggs as the crow, and they are of the same colour, but smaller.

#### The CALAO, or HORNED INDIAN RAVEN.

This bird exceeds the common Raven, both in size and in its habits of depredation: but it differs from all other birds in its beak, which, by its length and curvature at the end, appears designed for rapine: it has a kind of horn projecting from the top, somewhat resembling a second bill, which gives the bird a very formidable appearance. The horn springs from the forehead, and grows to the upper-part of the bill. Its bulk is considerable, and near the forehead is about four inches broad: it has some resemblance of the horn of the rhinoceros, but is more crooked at the tip. Were the body of this bird proportioned to the head, the calao would exceed the vulture or the eagle in magnitude. The breast and the whole body is black, but the tail is greenish, and the head of a dark yellow, without feathers: below the neck there hangs a kind of a bag, not unlike that of a turkey-cock. These birds, even in the East-Indies, are esteemed a great rarity, and sell for a considerable sum.

#### The ROYSTON CROW.

The bill of this species agrees in shape with that of the rook, and they both have a similitude in their manners; both flying in flocks, and both feeding on insects. The Royston Crow is a bird of passage in Great-Britain; visiting that country in the beginning of winter, and leaving it with the wood-cocks. It is found in both the inland and maritime parts of our country, and, in the latter they feed on shell-fish. They breed in Sweden, and usually build in alders. They lay, in general, four eggs. Belon, Gesner, and Aldrovandus agree that this is a bird of passage in their respective countries; that it visits high mountains in the breeding season, and descends into the plains on the approach of winter.

The length of these species is about twenty-two inches, the breadth twenty-three inches, and the weight twenty-two ounces. The head, the under-side of the neck, and the wings, are black, finely glossed with blue: the back, breast, belly, and upper-part of the neck, are of a pale ash-colour: the legs are black, and smaller than those of the rook. These are the only sort of Crow which are found in Shetland, though we cannot ascertain whether they breed in any other of the British isles.

#### NATURAL HISTORY of the CORNISH CHOUGH.

THIS bird is about seventeen inches in length, and thirty-three inches in breadth, when the wings are extended. It weighs twelve or thirteen ounces. It is almost as large as a crow, and nearly of the same shape. The bill, legs, and feet are red, but the feathers all over the body are black. It is remarkable for the unusual softness of its voice, when it applies for meat to those who often feed or caress it; and is equally remarkable for its frightful shriek at the approach of any thing strange. It is commonly kept about the houses in Cornwall, where it becomes tame, like ravens or magpies, and is equally mischievous; delighting in stealing money, or any shining bauble it happens to meet with. In its wild state, it is very apprehensive of danger, and builds its nest upon inaccessible cliffs, and in the middle of the steepest rocks. When tamed it is very amusing, docile, regular, and constant to its hour of meals. It goes early to roost, and generally takes shelter in some unfrequented place in tempestuous weather; but in serene weather, it gets upon the tops of houses, or struts about the ground in a very stately manner. Aldrovandus supposed this bird to be peculiar to the Alps, but it is found in Crete, Ireland, and Wales, as well as in the county of Cornwall in England.

#### NATURAL HISTORY of the JACK-DAW.

THE length of this bird is thirteen inches, the breadth twenty-eight inches, and the weight nine ounces. The head is large in proportion to its body; which, Mr. Willoughby says, argues him to be ingenious and crafty. The forehead is black, the hind part of the head ash-coloured; the breast and belly of the same colour, but more obscure: the rest of the plumage is black, slightly glossed with blue: the feet and bill are black. He is docile and loquacious. He builds in steeples, old castles, and high rocks, and lays five or six eggs in a season. Jackdaws flock together, and feed on insects, grain, seeds and fruits. They breed in England, and many other countries of Europe.

#### NATURAL HISTORY of the MAGPIE.

THE marks of this species are so well known, that it would be impertinent to give a particular description. Were its other accomplishments equal to its beauty, few of the feathered tribe could be put into competition with it. Its black, its white, its green, and purple, with the rich and gilded combination of the glosses on its tail, are elegant beyond description; but it is restless, vain, loud, and quarrelsome, and an unwelcome intruder every where; embracing every opportunity of doing mischief.

The bill of the Magpie resembles that of the butcher-bird, having a sharp process near the end of the upper chap. It also resembles it in the shortness of the wings, and the form of the tail, each feather shortening from the two middlemost. It agrees still more in its food, living upon worms, insects, and small birds. It will even destroy young chickens when it finds them separated from the hen. It lays six or seven eggs, which are of a pale green colour spotted with brown.

The Magpie has the insolence to tease the largest animals, when its insults can be offered with security. They are frequently seen perched upon the back of an ox or a sheep, pecking up the insects that are to be found there; chattering and tormenting the poor animal at the same time. They make dili-



diligent search after the nests of birds, and if the parent escapes, his mansion is plundered of the eggs. Scarce any food comes amiss to it. Like the raven, it feeds on carrion; like the rook it delights in grain; and, like the cuckoo, it devours the eggs of birds. It is more provident, however, than most other gluttons; for when satisfied for the present, it treasures up the remainder of the feast for another occasion: even in a tame state, it will conceal its food when it has done eating, and when its appetite returns, it will return to the secret hoard.

The nest of the Magpie is usually placed in the middle of some hawthorn-bush, or on the top of an high tree. The place, however, is always found as inaccessible as possible to men, and the nest is curiously fenced above, to defend it from the various enemies of the air. The kite, the sparrow-hawk, and the crow, are to be guarded against; the Magpie having sometimes plundered their nests, naturally supposes they will embrace the first opportunity to retaliate. To prevent this, it builds a nest with surprising labour and ingenuity. The body of the nest is composed of hawthorn-branches, with the thorns sticking outwards. It is lined with fibrous roots, wool, and grass, and then ingeniously plastered round with mud or clay. Above the nest, a canopy is raised, composed of the sharpest thorns, so curiously interwoven as to admit of no entrance but at the door: that aperture being just large enough to permit egress and regress to the owners. In this fortified mansion the male and female hatch and bring up their brood with security, sheltered from all attacks but those of the adventurous school-boy; who often pays too dear a price for the eggs, or young birds, by the wounds he receives from the pointed thorns.

In its domestic state, the Magpie is a more cunning, and consequently a more docile bird, than any other usually taken into keeping. Many of those who teach it to speak, have a ridiculous custom of cutting its tongue, which only torments the poor animal, without being of the smallest service. Though its speaking is sometimes very distinct, its sounds are too sharp to be an exact imitation of the human voice. The length of this bird is about eighteen inches, the breadth twenty-four inches, and the weight about nine ounces. There are many of these birds in Sweden, and they are found in many other countries. They began to pair in February, and lay their eggs very early. It is difficult to distinguish the cock Magpie from the hen, the colours are so exactly alike.

#### NATURAL HISTORY of the J A Y.

THE Jay is one of the most beautiful of the British birds. The bill is strong, thick, and black, and about a quarter of an inch long. The tongue is black, thin, and cloven at the tip. The forehead is white, streaked with black: the head is covered with very long feathers, which it can erect into a crest at pleasure. The neck, back, breast and belly are of a faintish purple, dashed with grey; and the covert feathers of the wings are of the same colour. The greater covert feathers of the wings are most beautifully barred with a lovely blue, black, and white. The tail consists of twelve black feathers, and the feet are of a pale brown. It lays five or six eggs, which are of a dullish white, mottled with a pale brown. Like the magpie, it feeds upon fruits, and in the summer is very injurious to gardens, being a great devourer of pease and cherries. In the autumn and winter they feed on acorns, and, according to Dr. Kramer, they will kill small

birds. Their native note is very disagreeable, but they are very docile, and may be taught to imitate the human voice.

The length of this bird is thirteen inches, the breadth twenty inches and an half, and the weight between six and seven ounces.

#### NATURAL HISTORY of the CHATTERER.

THE Chatterer is a native of Germany, and is somewhat smaller than the jay. It is variegated with a beautiful mixture of colours; red, ash-colour, brown, chefnut, and yellow; but what distinguishes this from all other birds, are the horny appendages from the tips of seven of the lesser quill feathers, which have the colour and gloss of the best sealing-wax. It lives in the woods, and feeds on juniper and other berries. This bird is also found in North-America.

#### NATURAL HISTORY of the ROLLER.

THIS is a very beautiful bird: the head is green, the breast and belly of a whitish blue; and the wings are variegated with black, white, and a delightful blue. But it may be distinguished from all others, by a sort of naked tubercles or warts near the eyes; by the shape of its tail, the outer feathers of which are longer than the rest; and by its toes, which are cloven quite to the bottom.

#### NATURAL HISTORY of the BLUE JAY.

THE shape of this bird is not unlike the common European Jay, except that the tail is longer, and the feathers of unequal lengths; those in the middle being the longest. The bill is black; the feathers on the top of the head are long and blue, and can at pleasure be raised into a crest. The sides of the head, and part of the throat are white, surrounded with a black line; and above each eye there is a white spot. The lower part of the neck behind, and the back, are of a blue, inclining to purple; the upper sides of the wings and tail are of a very fine blue, and the lower part of the back and rump are of the same colour. The tail feathers, except the two middlemost, are tipped with white, and barred with three black bars. The rest of the quills next the back, and the first row of the feathers above them, are tipped with white, and elegantly barred with black. The breast is of a brownish red, inclining to a rose colour, which gradually becomes white towards the belly. The legs, feet, and thighs are of a dusky brown. It inhabits Carolina, and has a more harmonious note than our European Jays. The colours of the female are the same as those of the male, except that they are somewhat duller.

#### NATURAL HISTORY of the BENGAL JAY.

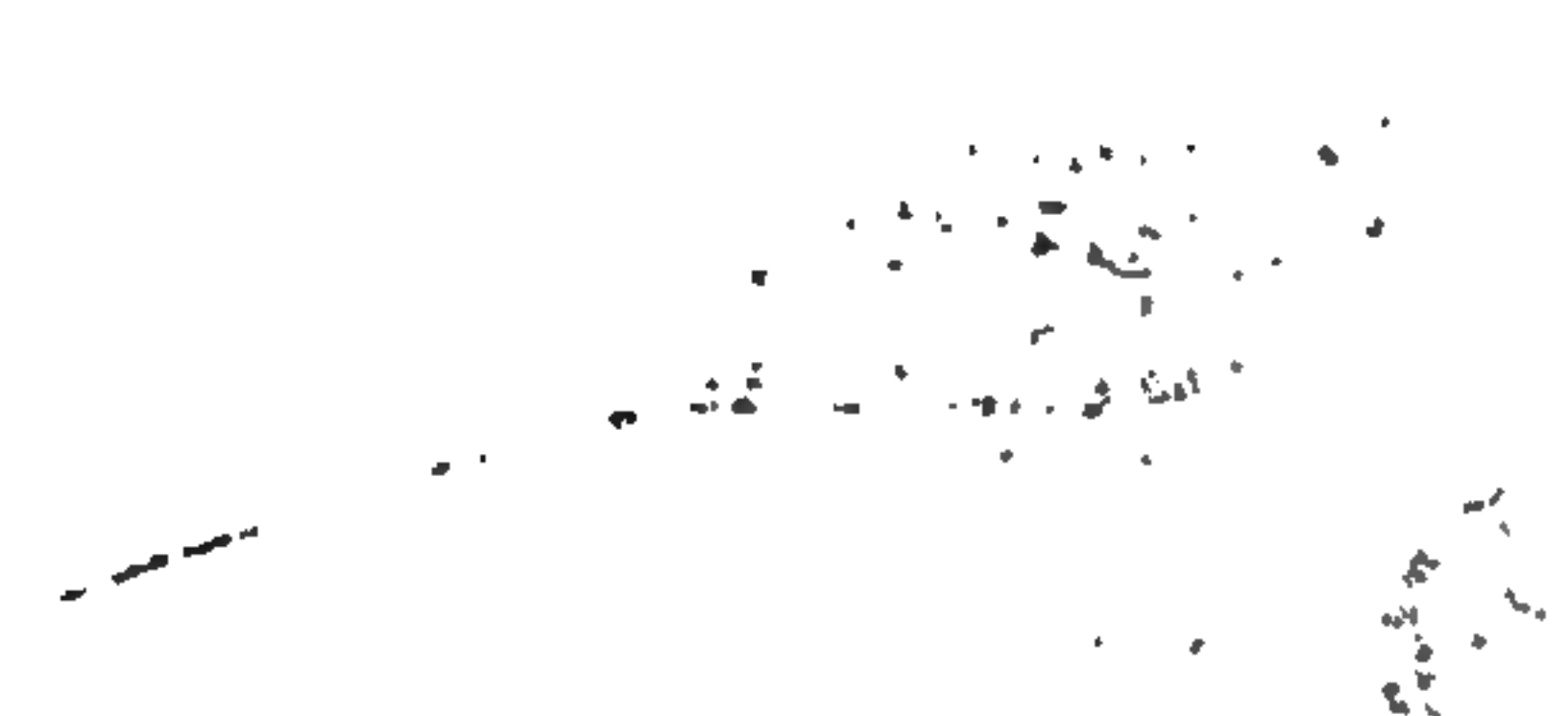
THIS is larger than the English Jay, and has an ash-coloured bill. The upper-part of the head is blue, and the neck and breast are a mixture of light brown and red, with a little cast of a lead colour. The back is of a muddy dark green, and the wings, belly, and thighs are blue. That part of the tail next the rump, as well as at the extremity, is of a dark blue; but the middle part is paler and whiter. The legs and feet are of a yellowish brown, with black open claws.

NATURAL





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# B I R D S

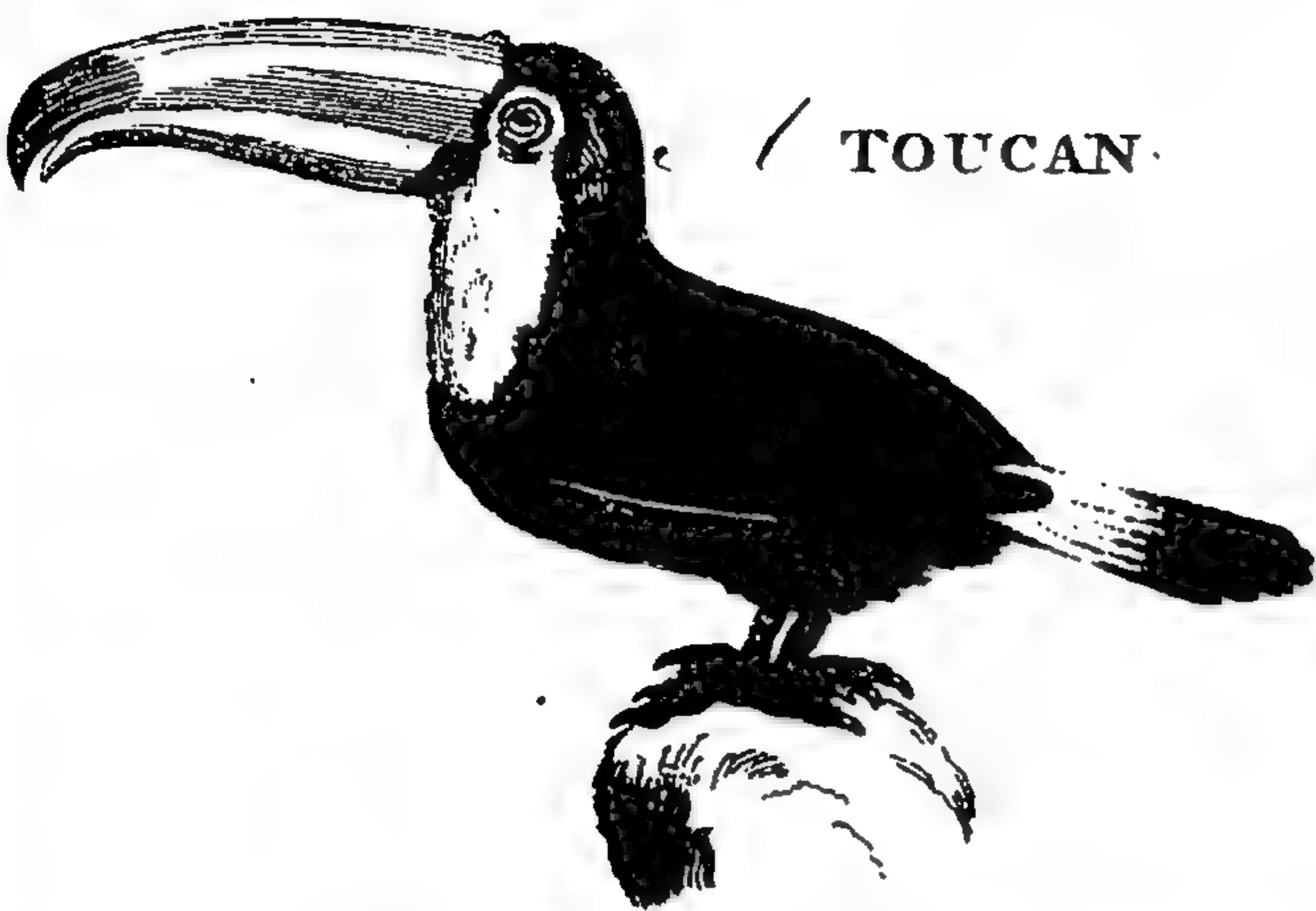
A SPOON-BILL



SOCO



/ TOUCAN



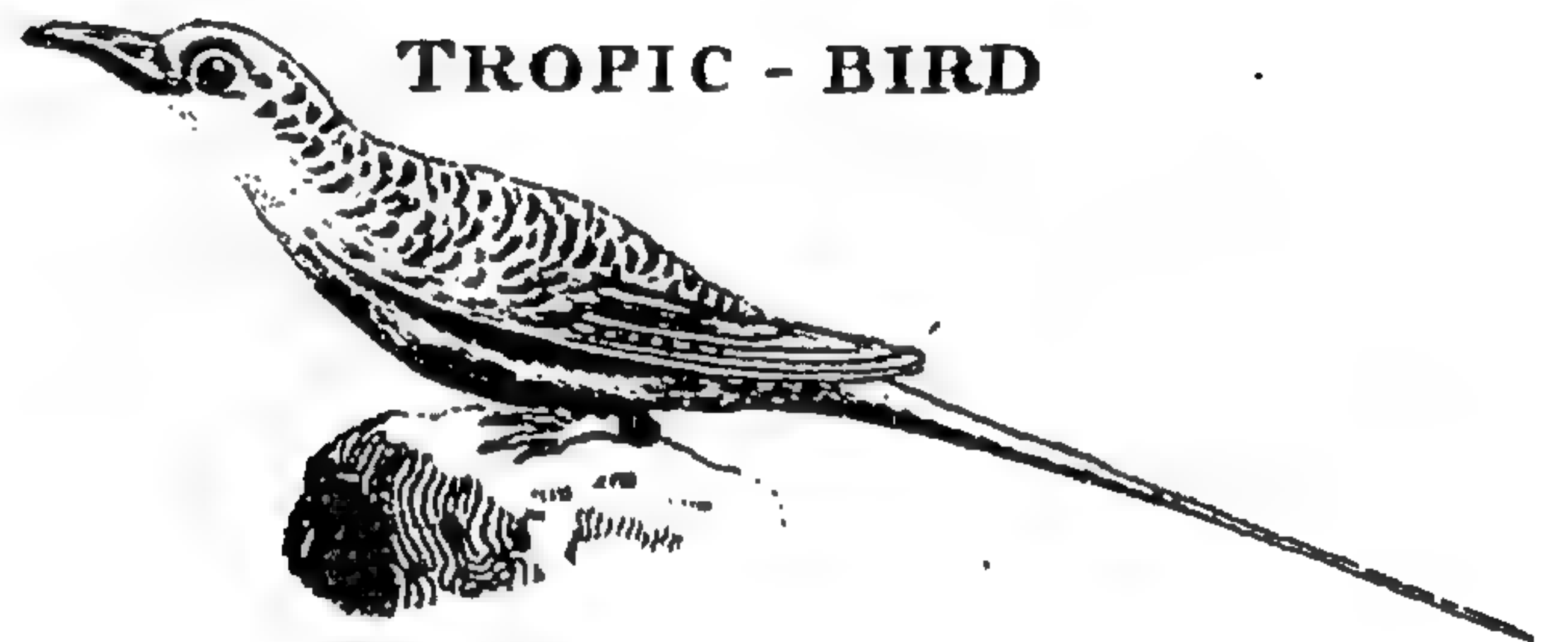
TAMATIA



A VULTURE



TROPIC - BIRD



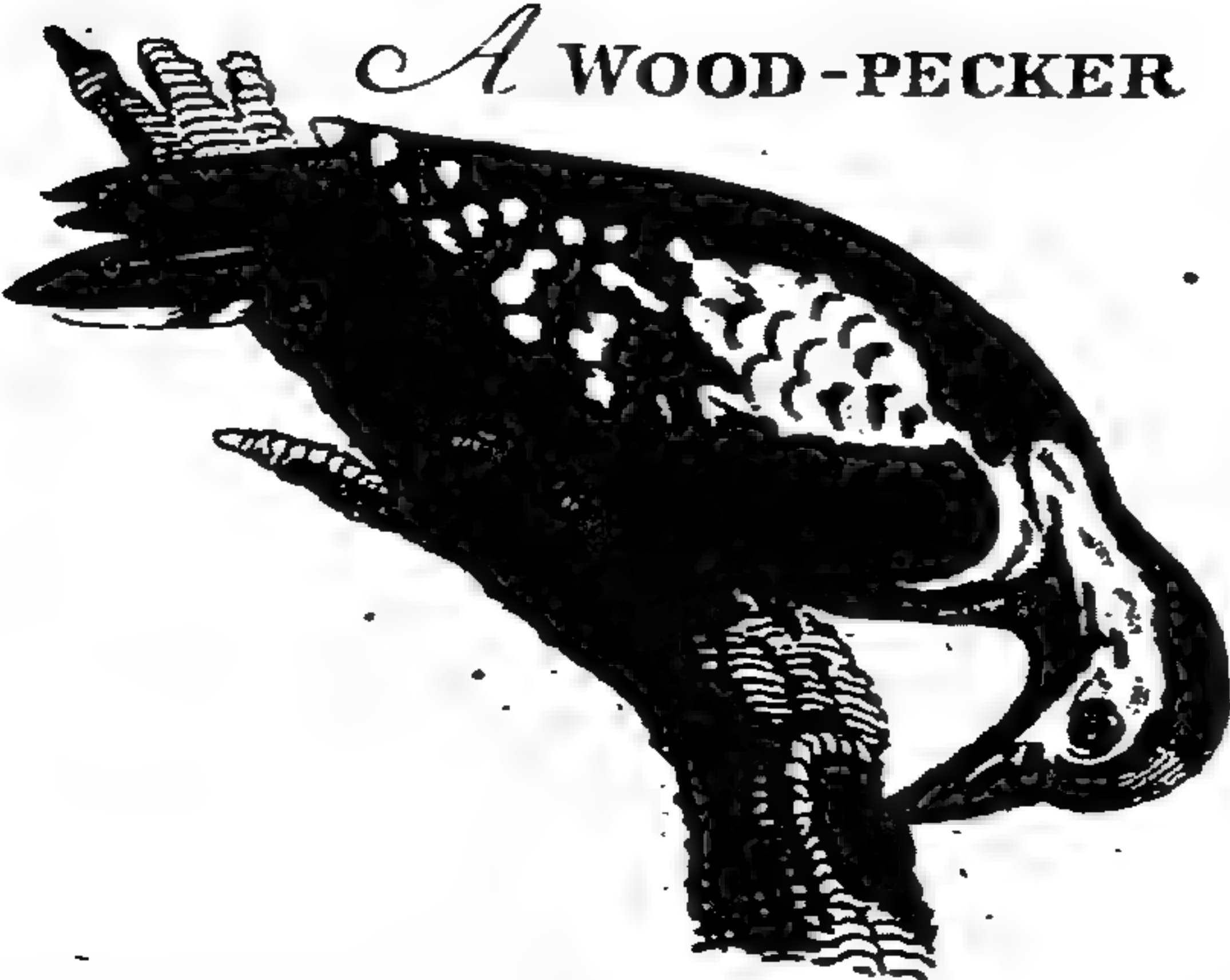
WHEAT - EAR



/ WRY - NECK



A WOOD-PECKER



WIMBREL





## NATURAL HISTORY of the LITTLE INDIAN PIE.

**T**HE bill of this bird is of a blackish colour towards the point, but the angles at the corner of the mouth are of an orange colour. The head, neck, breast, back, rump, and covert feathers of the wings, are of a deep black, with a shining gloss, changeable from blue to purple. The quill feathers of the wings, and those on the ridge next the breast, are of a dusky brown; but a few of the middle quills are white, as well as the first row of coverts just above. The belly and thighs are white; the middle feathers of the tail are black, and somewhat longer than those on the sides. The legs and feet are of a dark brown, and the toes have strong claws. This is a native of Bengal.

## NATURAL HISTORY of the RED-BEAKED TOUCAN.

**T**HE shape of this bird resembles that of the jack-daw, and the size is nearly the same; with a very large head to support its monstrous bill; which from the angles of its mouth to its point, is six inches and an half, and the breadth in the thickest part exceeds two inches. Its thickness near the head is one inch and a quarter; and it is a little arched or rounded along the top of the upper chap, the under side being round also. The whole of the bill is extremely slight, and almost as thin as parchment. The upper chap is of a bright yellow, except on each side, which is of a beautiful red; as is also the lower chap, except at the base, which inclines to a purple. There is a black line of separation all round the base of the bill, between that and the head: the nostrils are placed in the upper part of the bill, and are almost covered with feathers; which has occasioned some writers to say, that the Toucan is without nostrils. Round the eyes, on each side of the head, is a space of bluish skin, destitute of feathers, above which the head is black, except a white spot on each side joining to the base of the upper chap. The hind part of the neck, the back, wings, tail, belly and thighs are black. The under side of the head, the throat, and the upper part of the breast, are white. There are a parcel of red feathers, in the form of a new moon with its horns upwards, between the white on the breast, and the black on the belly. The covert feathers under the tail are red, and those above it yellow. The legs, feet, and claws are ash-coloured, and the toes are disposed like those of parrots, two before, and two behind.

Travellers assure us, that notwithstanding this bird is furnished with so formidable a beak, it is very gentle and inoffensive, and so easily tamed, that it will sit and hatch its young in houses. They also say, it feeds principally on pepper, which it devours very greedily, gorging itself in such a manner that it excludes its crude and uncooked. Whatever credit this account may deserve, it is certain that the Toucan lives principally upon a vegetable diet; and, in a domestic state, it is seen to prefer such food to any other. Pozzo, who bred one of these birds tame, says it leaped up and down, moved its tail, and cried with a voice resembling that of a magpie. Any thing upon which parrots fed, seemed to be agreeable to it, but it was particularly fond of grapes; and, if they were plucked off one by one, and thrown into the air, it would catch them with great dexterity before they fell to the ground. Pozzo further informs us that its bill was hollow and extremely light, and consequently it had but little strength in a weapon which appeared so formidable: but its tongue seemed to assist the

efforts of this unwieldy machine. It was long, thin, and flat, and moved up and down; the animal often extending it five or six inches from the bill. It was of a flesh colour, curiously fringed on each side with very small filaments, exactly resembling a feather.

It appears evident that this long tongue is stronger than the thin hollow beak that contains it. Probably the beak is only a kind of sheath for this peculiar instrument, which is used by the Toucan, not only in making itself a nest, but also in obtaining its provision. It is, however, an absolute certainty that it builds its nest in the holes of trees, which have been previously made for that purpose; and it can hardly be supposed that so feeble a bill could penetrate such hard materials.

The Toucan has not only men, birds, and serpents to guard against, but also a numerous tribe of monkeys, still more prying, mischievous, and hungry than all the rest. It therefore scoops out its nest in the hollow of some tree, leaving a hole just large enough to go in and out at. There it sits, guarding the entrance with its great beak; and if the monkey, prompted by curiosity, or from any other motive, ventures to visit it, he usually receives such a welcome from the Toucan, that he is glad to escape with safety. This bird inhabits only the warm climates of South-America, where it is much esteemed for the delicacy of its flesh, and for the beauty of its plumage. The feathers of the breast are particularly admired; and the Indians pluck off the skin of this part, which, when dry, they glue to their cheeks: this they consider as an irresistible addition to their beauty, and every woman is happy in the possession of it.

The use of the extraordinary beak of this bird is for stripping off the pepper, and fruits of a like sort from the stalk; and this all of the kind do with surprising quickness.

When we contemplate the bird creation, the prodigious variety in their bills, wings, and claws, cannot fail to strike us; nor can we imagine, that all these different forms are no more than the mere play of nature, when we see how exquisitely designed and accommodated is every part of the creation. A nearer and more accurate survey will tend abundantly to convince us, that all these various parts in different creatures are calculated for the accommodations of their wants. They are a set of implements proportioned, by the all-wise and original designer, to the nature of their labours and manner of life. And he who wants to be satisfied of this, will do well only to consider a few instances, which will give him an additional proof of God's care of his creation, and of his consummate wisdom, which planned and which perfected this amazing scheme of things. More striking instances cannot be produced, than this before us, from which let the speculist turn to the little hard-beaked sparrow, and other small birds, which live upon seeds; to the wood-cock, the snipe, the curlew, which extract their aliment from the earth; the wood-pecker, whose horney bill is employed in picking insects from the hard wood; to the heron, the stork, the swan, the goose, and he will be assured, that these too, however minute, proclaim a wise and good Creator.

## NATURAL HISTORY of the PIE of the CARIBBEE ISLANDS.

**T**HIS beautiful bird has a kind of a white hood on its head, spotted and striped with black lines, which extend from the bill to the back, where the feathers are tawny as far as the rump, which is quite yellow. It has a blue neck, with a white circle



cle in the middle. It has a large tail, consisting of eight blue feathers, striped with white, two of which are nine or ten inches longer than the rest. The small feathers on the wings are tawny, striped with black lines; the large are a mixture of green and blue, the belly is entirely white, and the feet are red. These pies are shyer than those of Europe, hardly permitting a man to look at them while they are on the trees.

The Indian chattering Pie is like the common jay, but smaller.

The African Pie, seen near the Cape of Good-Hope, is about the size of the common jay, and has a red bill and red feet. It is entirely black, except a white circle round the neck. It frequents tall trees, and the tops of high rocks, and is particularly fond of wild almonds. It is a docile bird, and may be taught to speak like a parrot.

#### NATURAL HISTORY of the GREEN WOOD-PECKER.

**T**HERE are many kinds of this bird, and many varieties in each kind. They form large colonies in the forests of almost every part of the world. The wisdom of Providence in the admirable contrivance of the fitness of the parts of animals to their respective nature, cannot be better illustrated than from this genus.

Wood-Peckers feed entirely on insects; and their principal action is that of climbing up and down the bodies or boughs of trees. For the purpose of procuring their food, they are provided with a long slender tongue, armed with a sharp bony end, barbed on each side, which, by the assistance of a curious apparatus of muscles, they can exert at pleasure, darting it to a great length into the clefts of the bark, transfixing and drawing out the insects that lurk there. Such is the instrument with which this bird is provided; and this is the manner in which this instrument is employed. When a Wood-Pecker discovers a rotten hollow tree, where there are worms, ants-eggs, or insects, it instantly prepares for its operations. Resting by its strong claws, and leaning on the thick feathers of its tail, it bores with its sharp strong beak, till it discloses the whole internal habitation. Then, either from its satisfaction at the sight of the prey, or with intent to alarm the insect colony, it sends forth a loud cry, which creates terror and confusion among the whole tribe, and puts them immediately in motion; while the bird luxuriously feasts upon them at leisure, darting its tongue with unerring certainty, and devouring the whole brood.

The depredations of the Wood-Pecker, however, are not confined solely to trees, but it sometimes descends to the ground to try its fortune at an ant-hill; where it is not so secure of prey as in the former case, though the numbers are much greater. They usually lie too deep for the birds to come at them, but they supply by stratagem the defect of their power. The Wood-Pecker pecks at their hills, in order to call them abroad; and, thrusting out its long red tongue, which resembles their usual prey, the ants come in crowds to settle upon it: the bird, watching a favourable opportunity, withdraws its tongue at a jerk, and devours the devourers.

The Wood-Pecker makes cavities in trees to form its nest, and to lay in. This is performed with the bill, though some have erroneously affirmed that the animal uses its tongue, as a gimblet, to bore with. For this purpose, the Wood-Pecker chooses those trees that are decayed, or those which have soft wood, like beech, elm, and poplar. In these it can, with great facility, make holes that are exactly round: but as it is delicate in its choice, it usually

makes several before any one will give it entire satisfaction. When it has made one that it approves of, it nestles and brings up its young in it; and those which it has deserted are taken possession of by other birds, which are not such expert borers, and are less delicate in their choice. The jay and the starling sometimes lay their eggs in those holes; and bats are frequently known to occupy them. School-boys, who have thrust in their hands with certain hopes of plucking out a bird's egg, have sometimes, to their great mortification, had their fingers bitten at the bottom.

The nest of the Wood-Pecker has neither feathers, straw, nor any other lining; its eggs are deposited in the hole, without any thing except the heat of the parent's body to keep them warm. Their number is usually five or six, which are always oblong, and of a semi-transparent white.

The green Wood-Pecker is about thirteen inches long, twenty-one inches broad, and weighs six ounces and an half. The bill is dusky, triangular, and near two inches long: it is exceeding strong and hard, and formed like a wedge at the end. Dr. Derham observes that a neat ridge runs along the top, as if an artist had designed it for strength and beauty. The eyes are surrounded with black, beneath which there is a crimson mark in the males, though not in the females. The back, neck, and lesser coverts of the wings, are green; and the rump is of a pale yellow. The greater quill feathers are dusky, spotted with white on each side. The tail consists of ten stiff feathers, the ends of which are generally broken, as the birds rest on them in climbing: the tips of them are black, and the other parts are alternately barred with dusky and deep green. The whole of the under part of the body is of a very pale green; and the thighs are marked with dusky lines. The legs, which are of a palish green, are short and strong; the thighs are very muscular; two of their toes point forwards, and two backwards.

This bird is also called the Rain Fowl, because it is supposed to foretel rain, when it makes a greater noise than usual. Brisson, however, calls it *Le Pic-verd*.

#### The GREAT SPOTTED WOOD-PECKER.

This bird is about nine inches in length, sixteen inches in breadth, and weighs two ounces and three quarters. The bill is of a black horn-colour, and the forehead of a pale buff-colour. The crown of the head is of a glossy black, and the hind part is marked with a rich deep crimson spot. The cheeks are white, bounded beneath by a black line, which passes from the corner of the mouth, and surrounds the hind part of the head. The neck is encircled with a black colour; and the throat and breast are of a yellowish white. The back, rump, coverts of the tail, and lesser coverts of the wings, are black. The quill feathers are black, each web being elegantly marked with round white spots. The four middle feathers of the tail are black, the next are tipped with dirty yellow, and the bottoms of the two outermost are black. The legs are of a lead-colour. The colours of the female agree with those of the male, except that the female wants that beautiful crimson spot on the head.

#### The LESSER SPOTTED WOOD-PECKER.

This resembles the former in colour and shape, but is considerably smaller, and hardly weighs an ounce. Its length from the tip of the bill to the end of the tail, is only six inches, and its breadth, when the wings are extended, is eleven inches. The forehead is of a dirty white: the crown of the head (in the male only) is of a beautiful crimson; the cheeks and sides of the neck are white: the hind part



part of the head and neck, and the coverts of the wings, are black. The back is barred with black and white; the breast and belly are of a dirty white, and the vent feathers of a bright crimson. The crown of the head (in the female) is white, and the feet are of a lead colour: it has all the characters and habits of the larger kind, but is not so frequently seen.

#### The GUINEA WOOD-PECKER.

A traveller who walks into the forests of Guinea and Brasil, among the first strange objects that excites his curiosity, is struck with the multitude of birds nests hanging at the extremity of the branches of trees. Many birds build in this manner, but the chief of them are of the Wood-pecker kind; and indeed, there is not, in the whole history of nature, a more singular instance of the sagacity of those little animals, in protecting themselves against those enemies from which they apprehend danger. In cultivated countries, the chief caution of the feathered tribe, is to conceal their nests from the invasions of man, considering him as their greatest enemy. But in these remote and solitary forests, where man is seldom seen, he cannot possibly be dreaded. Regardless how much the nest is exposed to general notice, the parent is satisfied if it be out of the reach of those rapacious creatures that live by robbery and surprize. The monkey and the snake are almost the only enemies it has to fear; and, to guard against them, it builds its nest upon the most outward branches of a tall tree, such as the banana, or the plantane. On one of those immense trees are seen the strangest assemblage of creatures that can be imagined. Some particular tribe of monkeys inhabit the top, which drive off all others that attempt to associate with them. About the trunk of the tree are twined great numbers of the larger kind of snakes, waiting till some unwary animal comes within the sphere of their activity; and these extraordinary nests hang in great abundance at the edges of the tree, inhabited by birds of the most delightful plumage.

They usually form the nest in the following manner: when the time of incubation approaches, they fly about in search of a kind of moss peculiar to those countries. It is a fibrous substance resembling hair, which may be easily moulded into any form. This the little Wood-pecker glues, by some viscous substance gathered in the forest, to the extremest branch of a tree; then, adding fresh materials to those already procured, a nest is formed, that hangs like a pouch from the point of the branch. On one side there is a hole to enter at, and all the interior parts are lined with the finer fibres of the same substance.

These hanging nests are made by some other birds with still superior art. A small bird of the grosbeak kind in the Phillippine Islands, forms its nest in such a manner, that there is no opening but from the bottom where the bird enters, and goes up as it were through a funnel, like a chimney, till it comes to the real door of the nest, which lies on one side, and only opens into the funnel. Some glue their nests to the leaf of the banana-tree. But they are built with the same precautions to guard the young against the depredations of monkeys and serpents, which abound in every tree. The nest hangs secure, and these spoilers can only gaze upon them, while the bird flies in and out without danger or molestation.

#### NATURAL HISTORY of the BIRD of PARADISE.

**T**HERE are of this species nine sorts, according to some naturalists. Our countryman, Mr. Edwards, describes three. The greater Bird of Pa-

radise; the king of the Birds of Paradise; and the golden Bird of Paradise.

That these birds have no feet was believed generally some years since, but it is now well known that they have feet and legs as well as others, and those, says Ray, "not short, small, or feeble ones, but sufficiently great and long, armed with crooked talons, being the members of birds of prey."

The Bird of Paradise, described by Moregrave, is of the size of a swallow, with a small head and eyes, a sharp beak, thick feet, and crooked claws; the feathers about the beak are soft as silk, green and brown above, and black below: the top of the neck is of a gold colour, underneath the neck is a mixture of gold and green: the breast is of a deep brown, and the rest of the body, wings and tail, of a beautiful brownish colour: the long feathers on the sides are of a gold colour near their rise, but in other parts of a whitish yellow.

The king of the Birds of Paradise, mentioned by Clusius, is the least of the species; the wings are much longer than the body; the beak is white, and an inch in length; the lower part is covered with a sort of red silky down, as well as the fore-part of his head: the middle part of the eyes are full of black specks: the feathers on the neck and breast are of a deep black, and have the resemblance of silk: the back, wings, and tail, are all of the same colour, that is, of a dusky yellow: the feathers which cover the belly are white, but near the wings black: the quills are slender and black, and at the end rolled into a sort of ball: on one side of them are long, fine, shaggy hairs: the upper side is of a shining deep green, but they are of a dusky yellow underneath.

Mr. Edwards's king of the Birds of Paradise differs from that of Clusius. The beak and thighs of his are white, though the lower part of the thighs above the knees incline to brown.

The golden Bird of Paradise has a gold coloured neck as well as beak: the feet and toes are yellow: the breast and back of a pale orange colour; and the large feathers of the wing and tail are of a reddish orange.

A Bird of Paradise, different from those which we have described, is found, now and then, in the island of Ceylon, in the East-Indies; but no writer has given a particular description of it.

Linnæus mentions only two of these birds in his system. Not. 1. *Paradisæa*, with two long threads at the tail, which are feathers at the points, and rolled up. 2. *Paradisæa*, with feathers at the sides longer than the body, and two long bristly feathers in the tail.

The reflective reader will note, in every instance produced, the great beauty and variety of the Creator's works, which all unite to attest his power, his goodness and wisdom.

The Bird of Paradise, which is a native of the Molucca Islands, exceeds in beauty all others of the pie kind: they are also found in great plenty in the island of Aro. There, in the delightful and spicy woods of the country, do these beautiful creatures appear in large flocks; so that the groves, which produce the richest spices, produce also the finest birds. The inhabitants are so sensible of the pleasures these afford, that they call them God's birds, as being superior to all birds that he has created. They are called by some the swallows of Ternate, from their rapid flight, and from their being continually on the wing in pursuit of insects, which are their usual prey.

The country, where they are bred, having its tempestuous season, when rain and thunder continually disturb the atmosphere, few of them are then to be seen. At such times it is imagined they fly to other countries, where their food is to be found in greater abundance; for, like swallows, they have their



their stated times of return. In the beginning of August, vast numbers of them are seen flying together; and, as the inhabitants suppose, follow their king, who is distinguished from the rest by the lustre of his plumage, and that respect and homage which is paid him. They perch, in the evening, upon the highest trees in the forest; generally making choice of one which bears a red berry, upon which they sometimes feed when they have scarcity of other food.

The natives, who employ themselves in killing these birds, in order to sell them to the Europeans, usually hide themselves in the trees where they resort; and, having concealed themselves in a kind of bower, which they form of the branches, they shoot at them with reedy arrows; and, if they happen to kill the king, as they call him, they seldom fail of taking the greatest part of the flock.

#### The PIED BIRD of PARADISE.

This bird has a blackish bill like that of a duck, and at the base of the upper chap there are stiff black hairs. The head and neck are black, with a crest of loose slender feathers bending backwards. The whole of the body is white, except the wings: the prime quills are black, except towards the roots, where they are whitish. The quills next the back are black in the middle, and white on the edges: the lesser covert feathers of the wings are white, with a long dash of black on each feather. The tail is nearly as long as that of a magpie, and the two middle feathers are about ten inches longer than the rest. The tail feathers are white, and the shortest of them are tipped and bordered with a fringe of black. The shafts of the tail feathers are black, except so much of the long feathers as shoot beyond the shorter. The feet resemble those of the king's-fisher. This bird is an inhabitant of the East-Indies.

#### NATURAL HISTORY of the CUCKOO.

THE note of the Cuckoo is known to all the world, but the history and nature of the bird itself remains still in obscurity. It has been asserted that it devours its parent, and that it changes its nature with the season, and becomes a sparrow-hawk; but these fables are now sufficiently refuted. Still, however, it remains a secret where it resides in winter, or how it provides for its supply during that season.

The claw and bill of the Cuckoo are smaller and much weaker than those of other rapacious birds. This singular bird, which is somewhat less than a pigeon, shaped like a magpie, and of a greyish colour, is distinguished from all other birds, by its round prominent nostrils on the surface of the bill. The lower part of the body is of a yellowish colour, with black transverse lines under the throat, and on the top of the breast. The head, the upper-part of the body, and the wings, are beautifully marked with tawny and black transparent stripes, and there are a few white spots on the top of the head. The ends of the feathers on the rump and the bottom of the back are white, and the inner edge of the outward part of the wings are painted with large transverse white spots. The tail is pretty long, with black and tawny streaks running across it, and white spots on the outward edges of the feathers. It consists of eight feathers, of which two in the middle are much the longest, and those on each side grow regularly shorter. The legs, which are very short, are clothed with feathers down to the feet, which are weak and yellowish, and the claws are nearly of the same colour. It has four toes, two of which are placed before, and two behind; the more inward of these are

shorter than the rest. Its mouth is large, and yellowish on the inside.

Having disappeared all the winter, the Cuckoo discovers itself in our country early in the spring, by its well-known voice. He is indeed silent for some little time after his arrival: his note is a call to love, and is used only by the male, who is usually perched on a dead tree, or a bare bough, repeating his song, which he loses as soon as the amorous season is over. The note of this bird is so uniform, that his name in all languages, seems to have been derived from it; and in all countries it is used in the same reproachful sense.

This reproach probably arose from this bird making use of the nest of another to deposit its eggs in; leaving the care of its young to another of the feathered tribe. A water-wagtail, or hedge-sparrow, generally performs the office of nurse to the young cuckoos; and if they happen to be hatched at the same time with the genuine offspring, they quickly destroy them by over-laying them, as their growth is soon so superior.

From the cheerful voice of the Cuckoo, the farmer may be instructed in the real advancement of the year. Human calendars we know are fallible; but, as the note of this bird depends upon a certain temperature of the air, these feathered guides point out to us the true commencement of the season. The note of the Cuckoo is pleasant, though uniform; and, from an association of ideas, seldom occurs to the memory, without reminding us of the sweets of summer. This bird usually lays one egg, which is speckled, and about the size of a black-bird's.

When the Cuckoo is fledged and fitted for flight, it does not long attend its supposed parent: as its appetites for insect food increases, it cannot expect a supply by imitating its little instructor; it therefore takes a friendly leave, and seldom offers any violence to its nurse. But all the little birds consider the young Cuckoo as an enemy, and revenge the causes of their kind by their repeated insults. All the smaller birds form the train of its pursuers; but the wry-neck is the most active in the chase; and from thence has been considered by many as the provider and attendant of the Cuckoo. But it is well known that it follows with no friendly intention; it only attends as an insulter or a spy, to warn the little warblers of the depredations of the Cuckoo.

Such are the habits of this bird while it continues amongst us; but at the approach of winter it totally disappears, and its passage cannot be traced to any other country. Some imagine it lives concealed in hollow trees, and others that it passes into warmer climates. Which of these opinions is true, is very uncertain, as nothing has been related on either side that can be absolutely relied on. The most probable conjecture is, that as quails and woodcocks shift their habitations in winter, so also does the Cuckoo: but whither it retires, or if any person has ever seen it on its journey, we are at a loss to determine.

It has been doubted whether these birds are carnivorous; but Reaumur, who bred up several, informs us that they would not feed upon bread or corn, flesh and insects being their favourite provision; but insects seemed to afford them the most agreeable repast, and they greedily devoured them. Their voracity indeed is not to be wondered at, their stomach being so capacious, as to reach from the back-bone to the vent. Nevertheless, they are not to be considered as birds of prey, being destitute of the necessary strength and courage. They are naturally weak and timid, as appears by their flying from small birds, by which they are every where pursued.

The length of the Cuckoo is fourteen inches, the breadth twenty-five inches, and the weight about five ounces. The young birds are brown, mixed



with black, and, in that state, some authors have described them as old ones.

In different parts of the world, there are various kinds of this bird, differing both in size and colour. Brisson enumerates twenty-eight sorts of them. He mentions one of Brasil, as making a most horrible noise in the forests, which must be a very different note from that by which our cuckoo is distinguished. Linnæus informs us that the male and female Cuckoo resemble each other in colour, except that the male has the corners of the mouth yellow, as in young sparrows; and the head, back, and neck, are of an ash colour, without any grey spots; and that the belly is darker. The flesh of Cuckoos is seldom eaten, for it is not easily obtained; and perhaps it may not generally be thought fit for that purpose; but those who have tasted it, affirm that the young Cuckoo is a most delicious morsel. The Italians, in particular, are extravagantly fond of it.

The Cuckoo was consecrated to Jupiter. The fable says, that God, having made the air extremely cold, transformed himself into a Cuckoo, and went to repose himself on the bosom of Juno, who received him willingly: a poetic figure, which intimates the success of an intrigue. Mount Thornax in Peloponnesus, where this adventure happened, was from that time called the mountain of the Cuckoo.

#### NATURAL HISTORY of the PARROT.

OF all foreign birds, the Parrot is the best known among us, as it unites the greatest beauty with the greatest docility. It imitates the human voice better than any other bird; the raven being too hoarse in its speech, and the jay and magpie too shrill. It is astonishing with what ease the Parrot is taught to speak; we are assured from good authority, that one of these birds was taught to repeat a whole sonnet from Petrarch. Not many years ago, a gentleman in the city of London became possessed of two Parrots, each having received a very different education from the other. One had received his tuition from a cook-maid in a gentleman's kitchen, and the other had obtained his instruction in a very religious family, where the morning and evening services were regularly repeated every day. The former, probably from hearing the cook frequently make use of the same expression, often cried out in a distinct and audible voice, "The d—l take my mistress!" The latter, from attending to the responses which he had heard in the religious family, always made responses to the imprecations of the other in the following words, "We beseech thee to hear us, good L—d!" So that for hours together, the Parrots would thus entertain themselves and their auditors; one crying, "The d—l take my mistress," and the other uttering immediately afterwards, "We beseech thee to hear us, good L—d!"

Birds, as well as men, who talk a great deal, may sometimes happen to drop a pertinent expression, or, as the phrase is, say a good thing. Willoughby relates a story of a Parrot, which will illustrate this observation. Though it has been mentioned by Dr. Goldsmith, and many other authors, we hope we shall stand excused for introducing it here. These are his words, "A Parrot belonging to king Henry the Seventh, who then resided at Westminster, in his palace by the river Thames, had learned to talk many words from the passengers as they happened to take water. One day, sporting on its perch, the poor bird fell into the water, at the same time crying out, as loud as he could, "A boat, twenty pounds for a boat!" A waterman, who happened to

No. 18.

be near, hearing the cry, made to the place where the Parrot was floating, and taking him up restored him to the king. As it seems the bird was a favourite, the man insisted that he ought to have a reward rather equal to his services than his trouble; and as the Parrot had cried twenty pounds, he said the king was bound in honour to grant it. The king at last agreed to leave it to the Parrot's own determination, which the bird hearing, cried out, "Give the knave a groat."

Our naturalists have, in vain, attempted to arrange the various species of this bird. Linnæus makes the number of its varieties amount to forty-seven; and Brisson doubles that number, extending his catalogue to ninety-five. This list might perhaps be increased, were every accidental change of colour to be considered as constituting a new species. Those who usually bring over these birds seldom make more than three or four distinctions. The large kind, which are about the size of a raven, are called maccaws and cockatoos; the next are simply called Parrots; those which are entirely white are called lories, and the smallest size of all are called parroquets. Though these are different in size, they are all formed alike, having two toes before, and two behind, for climbing and holding: they have all strong hooked bills for breaking open nuts and other hard substances out of which they feed; and they have loud harsh voices, which make their native woods resound.

The toes of these birds are singularly contrived, which evidently appear when they walk or climb, and when they are eating: for walking or climbing, they stretch two of their toes forward, and two backward; but when they use the foot to convey the meat to their mouths, they dextrously turn the greater hind toe forward so as to take a firmer grasp of what they are going to feed on, standing upon the other leg the whole time. They do not, like other animals, turn their meat inwards to the mouth, but, in a seeming awkward position, turn it outward, and in that manner hold the hardest nuts, till they break the shell with their bills, and extract the kernel.

The bill is of a peculiar kind, for both the upper and lower chaps are moveable. In most other birds the upper chap is connected, and makes one piece with the skull; but in these it is joined to the bone of the head by a strong membrane, placed on each side, that raises and depresses it at pleasure. Thus they are enabled to open their bills the wider; which is extremely convenient, as the upper chap is so hooked, and hangs so much over, that if only the lower chap had motion, they could hardly gape wide enough to receive their nourishment.

The beak and the toes are often employed both together, when the Parrot is exercised in climbing. He cannot, like the other birds, hop from bough to bough, its legs not being adapted for that purpose; it first catches hold with the beak, as if with a hook; then it draws up its legs and fastens them; afterwards it advances the head and the beak again; and thus puts forward the body and the beak alternately, till it attains the height it aspires to.

The tongue of the Parrot resembles the human tongue, on which account some imagine it is so well qualified to imitate the human voice; but the organs, by which these sounds are articulated, lie farther down in the throat, being performed by the great motion of the os hyoides.

Though a common bird in Europe, the Parrot will not breed here; the climate being too cold for its warm constitution. When arrived at maturity, it is able to endure our winter, yet it is in some degree affected by its rigour, its spirit and appetite being impaired during the colder part of that season. This bird, however, lives a considerable time,



even with us, if properly attended to; and, indeed, it is to be lamented, that too much of the attention of some people is engaged in this business. The best excuse that can be pleaded by those who spend whole hours in teaching their Parrots to speak, is their extreme sagacity and docility; and indeed, on those occasions, the bird seems the wisest animal of the two. In those families where the master or the mistress have the least to do, this bird receives the greatest instruction, and becomes more expert in proportion to the assiduity of its teachers. The French ladies spend a great part of their time in instructing their feathered pupils, and it must be acknowledged that the Parrots in France speak much more distinctly than those in England, in consequence of their continual schooling. But, even the Parrots of France are much inferior to those of the Brasils, where their education is considered as a very serious affair. Clusius assures us that the Parrots of that country are the most sensible and cunning of all animals not endued with reason. There is a large bird of this kind there, called the *aicurus*, the head of which is red, violet, and yellow; the body green, the ends of the wings red, and the tail long and yellow. This animal is seldom brought into Europe, but it is a prodigy of understanding. "A certain Brazilian woman," says Clusius, "that lived in a village two miles distant from the island on which we resided, had a Parrot of this kind, which was the wonder of the place. It seemed indued with such understanding, as to discern and comprehend whatever she said to it. As we sometimes used to pass by that woman's house, she used to call upon us to stop, promising, if we gave her a comb, or a looking-glass, that she would make her Parrot sing and dance to entertain us. If we agreed to her request, as soon as she had pronounced some words to the bird, it began not only to leap and skip on the perch on which it stood, but also to talk and to whistle, and imitate the shoutings and exclamations of the Brazilians when they prepare for battle. In brief, when it came into the woman's head to bid it sing, it sang; to dance, it danced. But if, contrary to our promise, we refused to give the woman the little present agreed on, the Parrot seemed to sympathize in her resentment, and was silent and immovable; neither could we, by any means, provoke it to move either foot or tongue."

This sagacity seems also natural to Parrots in their native residence among the woods. They flock together, and mutually assist each other against their enemies. They usually breed in hollow trees, where they make a round hole, and have no lining to their nests. The largest Parrots lay two or three eggs, but it is probable that the smaller kind may lay more; it being an invariable rule in nature, that the smallest animals are the most prolific. In general, however, they have but two eggs, like those of the pigeon, and nearly of the same size; marked with little specks, like those of the partridge. Travellers assure us, that the nests of Parrots are always found in the trunks of the tallest, straightest, and the largest trees. The natives of those countries are very assiduous in spying out the places where they nestle; and, as those birds which are taken young have always the greatest docility, a nest is considered as worth taking some trouble to be possessed of: the usual method, therefore, is to cut down the tree; and though, in the fall, it frequently happens that the young Parrots are killed; yet, if one of them should survive, the spoiler considers himself as sufficiently rewarded.

But, as the natives cannot always supply the demand for young ones, they are contented to take the old; which they shoot in the woods with heavy arrows, headed with cotton, which usually stuns the bird, and brings it to the ground without killing it.

After receiving this blow, some of the Parrots die, and others recover. Those which are restored become talkative by proper tuition, tender usage, and plentiful feeding.

But the savages are not thus industrious to procure these birds merely for their conversation; for, though some of them are ill-tasted, others are very delicate food; particularly those of the small parroquet tribe. Labat assures us that the parroquet kind in Brasil, are the most beautiful in their plumage, and the most talkative birds in nature. They are extremely tame, appear delighted in the company of mankind, and are fond of holding a parley with him: but unhappily for them, they are possessed of another quality which is sufficient to put an end to this association: their flesh is the most delicate that can be imagined, and is highly esteemed by those who had rather indulge their appetites than their ears.

There are indeed many motives for destroying these beautiful birds, notwithstanding which they are in very great plenty; and are considered by the negroes, on the coast of Guinea, as their greatest tormentors. They are persecuted with the incessant screaming of flocks of Parrots, which also devour whatever fruits they attempt to produce by art in their little gardens. They are not indeed quite so numerous and destructive in other places; but there is hardly a country of the tropical climates that has not many of the common kinds, as well as some which are peculiarly its own. Upwards of an hundred different kinds have been enumerated by travellers, on the continent of Africa only; and there is one country in particular, north of the Cape of Good-Hope, which takes its name from the multitude of Parrots that inhabit its woods. White Parrots are seen in the burning regions of Ethiopia; in the East Indians they are of the largest size; they are docile and talkative in South America; they swarm in great variety and abundance in all the islands of the Pacific Sea, and the Indian Ocean, and add to the splendour of those woods which are clothed in continual verdure.

Though these birds are at present so universally known, and their variety so great, there was only one kind of them known among the ancients. The green parroquet, with a red neck, was the first of this sort that was brought into Europe, and the only one that was known to the ancients from the time of Alexander the Great to the age of Nero. This was brought over from India; and when the Romans became industrious to discover new and unheard-of luxuries, they found others in Gaganda, an island of Ethiopia, which they considered as a discovery of the utmost consequence.

Though Parrots have usually the same disorders with other birds, and some peculiar to their kind, they are generally long-lived; and, if properly attended, will live from twenty-five to thirty years. Condamine observes that the Americans, on the banks of the river Oyapœ, have the art of engrafting feathers of a different colour in the Parrot.

#### The WHITE-CRESTED PARROT.

The body of this Parrot is intirely white, and it has a red crest on the head. It is about the size of a tame pigeon, and carries its tail lifted up. The feet are yellowish, by which it may be distinguished from all the other Parrots. The tongue is brown, and the eyes of a dirty yellow. The legs and thighs are short, and, after breeding time, these Parrots fly in flocks.

#### The WHITE-HEADED PARROT.

The bill of this bird, and that part of the head next to it is white: the throat and the edges of the wings are red, and the lower part of the breast is



of a dark red. The back part of the head, the neck, the back, the wings, and tail, are of a deep green; but the breast and thighs are of a paler green. On account of the various colours, this bird might, with propriety, have been called the variegated Parrot; but green is the most predominant colour.

#### The GREEN PARROT.

This bird is about the size of a tame pigeon. The upper part of the bill is extremely black; next to that it is bluish, then it is red, and white underneath. It is about fifteen inches in length, and the head is yellowish, but the rest of the body is green. The back and wings are of a deeper colour, and the upper edges of the wings are red. The tail is short, the lower part of the sides are red, the upper part yellowish, and the legs and feet are of an ash-colour. This bird is frequently seen in England; some of them have a circle about the eyes, and a process on each side of the upper part of the bill, opposite to which there is a cavity on the lower part.

#### The GREEN BLACK-BILLED PARROT.

This bird is of a bluish green-colour on the top of the head, at the root of the bill, and under the throat. The upper part of the body is of a deep green, except that the sides of the wings next the body are of a beautiful scarlet as well as at the extremities. The lower part of the wings is yellow, tinged with green, and the lower part of the tail is scarlet.

#### The RED and BLUE PARROT of ALDROVANDUS.

The bill of this bird is smaller than that of the preceding, and is blackish. The head, neck, and breast are blue, except that the top of the head is yellow. The parts above the eyes are whitish, the belly green, and the tail yellow. The top of the back is of a pale blue, and the feathers that cover the wings of a faint rose colour. The length of this bird, from the end of the back to the extremity of the tail, is about nine inches.

#### The SCARLET ORIENTAL PARROT.

This is somewhat larger than a black-bird, and the body is entirely of a scarlet colour. The wings are green, except the prime feathers, which are black above, and crimson below, and the edges of them are yellow. The tail is of a yellowish green on the top, and yellow in the middle: it has a ring of green feathers above the knees. The bill, and the iris of the eyes, are yellow, and the legs are short and black. It is naturally an inhabitant of the East Indies.

#### The ASH-COLOURED PARROT.

This bird, which is about the size of a tame pigeon, has a black bill. The body is wholly of an ash-colour, the tail is red and very short, hardly extending beyond the points of the wings: the eyes are surrounded with a bare white skin. It is found in many parts of Africa, particularly in Guinea, from whence many of them are brought to England.

#### The RED and WHITE PARROT.

This bird is about the size of a maccaw, being about seventeen inches in length, and has a very short tail. The body is of a dusky white, and the hind parts of the back, rump, tail, and prime feathers are scarlet. This is one of those which are called Poppin-Jays.

#### The BLUE-FACED GREEN PARROT.

This bird, which is about the size of a pullet, has an ash-coloured bill, with a spot of orange colour

on each side of the upper-chap, which is moderately hooked, and has an angle on each side. The nostrils are placed on a skin which falls a little way over the bill, and the bill is surrounded with blue feathers. The eyes, which are placed in this blue space, are surrounded with a narrow bare skin, of a flesh-colour. The circles round the pupils of the eyes are of an orange colour, and on the throat, below the blue, is a plat of red feathers: the hind part of the head and neck, the back and covert feathers of the wings, and the breast, belly, and thighs, are of a beautiful green, but darker on the back, and lighter on the under side. The larger wing feathers are blue, and those following them are blue at their tips, and red at their bottoms. The tail above is yellow. Some of the inner webs of the outer feathers are red towards the roots, and the legs, feet, and claws, are of a flesh colour.

#### The GREEN and RED PARROT.

This is a native of China, and is about the size of a common hen: the upper chap of the bill is red at its base, and inclining to yellow at the point, which has an angle on each side, and is pretty much hooked. The lower chap is black, and the nostrils are situated between the feathers of the head and the base of the bill; there being no skin over the base, as there usually is in most of the Parrot kind. It is also singular in having the feathers continued close to the eyes. Round the pupils of the eyes, it has circles of a bright orange colour, and the head, neck, back, and covert feathers of the wings are of a beautiful deep green; as are also the breast, belly, and upper part of the tail. The greater quills of the wings are of a fine blue, and the first row of the covert feathers above them are of the same colour. The border of the wing, which falls on the breast, is also blue. The inside of the quills, and the under side of the tail, are blackish, and the tips of the tail feathers, on the under side, are of a brownish yellow. The thighs and covert feathers beneath the tail, are green, and the legs, feet, and claws, are black. This, according to Mr. Edwards, is an uncommon bird.

#### The HAWK-HEADED PARROT.

This bird, which is about the size of a small pigeon, is remarkable for having a long tail, in proportion to its body. The bill is of a dusky colour, pretty much hooked, and has sharp angles on the side of the upper chap. The iris of the eyes are hazel, surrounded with a bare skin of a blackish colour. The head is brown, with some light feathers on the middle, and some dark ones on the borders. The neck, breast, and belly are reddish, inclining to purple, fringed with feathers of a very bright blue. The back, rump, and upper sides of the wings, are of a beautiful green; and the tips of the greater quills of a dark blue. The middle of the upper side of the tail is green, and the side feathers are also green, except at the tips, which are of a dark blue. The thighs and covert feathers beneath the tail are of a pale green, and the legs, feet, and claws, of a lead colour. It is an inhabitant of the East Indies, and, when offended, it raises the feathers on the neck like a ruff.

#### The DIMINUTIVE GREEN PARROT.

This is an Ethiopian bird, and does not exceed the chaffinch in magnitude. The body is wholly green, but lighter on the belly than on the back. Such of the tail feathers as are fixed to the rump, are of a yellowish green, the next are of a bright red, and the next to those are tinged with green. The head, and all the covert feathers of the throat are of a bright shining red; and the bill, which is thick and strong, is of a reddish colour.



lour. The legs are ash-coloured; and the claws long and white.

#### The DUSKY PARROT.

The colours of this Parrot are not so agreeable as in most others of the kind. It is about the size of a common pigeon: the upper chap is black in the middle, and the skin at the root is of the same colour: the base of the bill is yellow, and gradually becomes red at the point. The top of the head is blackish; the sides, and the hind part of the neck being greenish. The back is dusky, the rump greenish, and the upper side of the tail green; but the outer webs of the two extreme feathers are blue. The throat, a little below the bill, is of a bright blue, and the breast, belly, and thighs, are of a dusky black. The wings are green, the quills next the back having yellow borders. This is a native of New-Spain, in America.

#### The WHITE-BREASTED PARROT.

This bird is also about the size of a pigeon, and the bill has angles on its edges, with a narrow skin at the base of the upper chap. The whole of the bill is of a dusky flesh-colour; but, lightest at the base; a flesh-coloured bare skin surrounds the eyes, and the crown of the head is black. At each corner of the mouth is a longish green spot; the throat and sides of the head are yellow, but the hind part of the neck gradually becomes orange. The back, rump, and tail are green; and the outer webs of the greater feathers of the wings are blue; but those in the middle are yellowish. The rest of the quills next the back are entirely green, as are all the covert feathers above them. The breast is white, and the lower part of the belly and the thighs are of an orange colour. The legs are ash-coloured, and the claws black. This Parrot is an inhabitant of the West-Indies.

#### The BLACK CAPPED LORY.

This Parrot, which is about the size of a turtle-dove, has a bill of an orange colour. At the base of the upper chap, it has a dusky flesh-coloured skin, and the eyes have a bright golden iris, being encompassed with spaces of bare skin of an obscure flesh-colour. The crown of the head is covered with black feathers, those on the hinder part having a bluish cast. The other part of the head, the neck, back, rump, the covert feathers above the tail, the breast, and upper parts of the thighs, are of a bright scarlet, except a space behind, between the neck and the back, which has a small mixture of red, and another on the lower part of the breast, also mixed with red. The belly, the lower part of the thighs, and the coverts beneath the tail, are of a fine blue. The upper part of the tail is also blue, though the middle feathers have something of a blackish shade. The inner webs of the tail feathers are yellowish; the upper sides of the wings are green, and some of the middle quills are yellow on the borders of their webs. The inner webs of the quills are of a beautiful yellow, except at the tips, where they are dusky, and the covert feathers on the inside of the wings are red; the ridge of them being somewhat yellowish. This is an inhabitant of the East-Indies.

#### The SCARLET LORY.

This is about the size of the blue dove-house pigeon, and is red at the crown of the head; the upper chap hangs over the other, and is yellow. The sides are of a beautiful orange-colour, and are encompassed by a bare ash-coloured skin. The head, neck, and body, and the coverts of the tail, are of a shining scarlet, except the feathers on the lower part of the neck behind, which are tipped with yellow. The upper part of the thighs is red, and the lower part

green. The greater quills of the wings are of a dark green, with a bluish cast; and those which fall over them are of a lighter green. The ridge of the wings below the joint is blue, and the inner webs of the first ten quills are red, except at the tips, which are blackish. The upper part of the tail is of a fine blue, except that the middle feathers are a little tinged with green. The inner webs of the tail feathers are red at their bottoms, and yellowish at the tips, and the legs and feet are bluish, inclining to black.

#### The LONG-TAILED SCARLET LORY.

This is smaller than the former, and has a longer tail, which is somewhat pointed; the middle feathers being almost two inches longer than those of the sides. The bill is strong, and of an orange-colour; and the nostrils are placed almost close together in a dusky skin, at the base of the upper part of the bill. It has a bare skin, of a dusky colour round the eyes, and the head, neck, and body, are of a fine scarlet; the sides under the wings, the thighs, and covert feathers of the tail, being also of the same colour; the fore part of the neck and breast is somewhat lighter, with a little yellow on the edges of the feathers. The greater and middle quills of the wings are red tipped with green; but those next the back are of a beautiful blue. The first row of the coverts of the wings are red, tipped with green, and the lesser are entirely red, except that part of the wing next the joint, which is green. The feathers on the tail are of a duller red than those on the body: the two outer feathers, and the tips of the others, have a little tincture of green, and the legs and feet are blackish. This description is taken from a bird that was brought from the island of Borneo, in the East-Indies.

#### The BLUE and YELLOW MACCAW.

This bird is equal in magnitude to a well-fed capon, and is three feet long, from the tip of the bill to the end of the tail: the bill is black, and very much hooked, forming almost a semi-circle, and is three inches in length; the thickness at the base being about two inches and an half. The length of the tail is eighteen inches; the legs are very short, and of a dusky colour; the feet are of the same colour, and the claws are black. The top of the head is flat, and of a green colour, and the skin round the eyes is ornamented with black feathers. A kind of black ring surrounds the neck; the upper part of the body is of a beautiful blue, and the lower part is yellowish.

#### The GREAT MACCAW.

This is about the size of that which next precedes it. The bill is shorter, the upper mandible is white, and the lower black. The space about the eyes and temples is whitish; the whole body, part of the wings, and all the tail, are of a beautiful red: the inner part of the prime feathers of the wings are of the same colour. The outer parts of the wings are of a deep blue, as well as the lower part of the tail. The second row of the quill feathers are yellow, edged with red, with a kind of bluish eye at the point. The legs are short, and the feet of a dark brown.

The arraracanga of Marcgrave, differs but little from this bird, except that the feathers on the wings are green half-way, and that half which is towards the extremity is blue.

#### The BRASILIAN MACCAW.

The bill of this bird is black, and the eyes are of a sky-blue, with a black pupil: the skin which surrounds the eyes, is spotted with black and white, and the legs and feet are brown. It has a kind of cap on the fore-part of the head, consisting of green feathers; and a circle of black feathers under the throat. The sides of the neck, the whole of the breast,



breast, and the lower part of the belly, are covered with yellow feathers. The hind part of the head, the neck, back and wings, are clothed with blue feathers; except that those at the extremities of the wings are mixed with yellow; and the tail consists of long blue and yellow feathers.

#### The COCKATOO.

Of these there are two kinds: the greater Cockatoo is about the size of a raven, and has a large strong bill, with a skin over the base of the upper chap, where the nostrils are placed. Both the skin and bill are of a blueish black; and in proportion to the body, the head is large. The eyes are of a dark colour, surrounded with a bare ash-coloured skin; and the feathers of the head are very long and loose, but those at the top of the head are longest, which the bird can raise at pleasure. This is the method it takes to express its resentment when it is offended. The plumage, in general, is white, though tinged with other colours in many parts. The tail is short, and consists of feathers of an equal length. The legs and feet are of a lead-colour, and the toes resemble those of other Parrots. It is an East-Indian bird, and is frequently heard to cry cockatoo very distinctly.

There is a lesser Cockatoo, which resembles the other in every particular, except in magnitude.

The paragua is a black Parrot, with a red breast, back, and belly: the circle round the eyes is red, and the bill and feet are of a dusky ash-colour.

The tarabe is a Parrot with a red head and breast. It is also red at the beginning of the wings, but green in every other part. The bill and feet are of a dusky ash-colour.

#### The LITTLE PARROT of BONTIUS.

This bird is about the size of a lark, with a grey bill and throat. The circle round the pupil of the eyes is of a pure white; and it can raise the feathers, like a crest, at the top of the head. The head, neck, and tail, and the lower part of the belly, are of a bright red: the breast, and lower feathers of the tail, are of a pale rose colour, terminating in a beautiful mixture of green and white. The wings are principally green, though intermixed with a few red feathers, the middle parts of which are variegated with rose colour and yellow.

#### Toe LORY PARROKEET.

The length of this bird is eight inches, and the bill is of a bright orange-colour; but the circle round the eyes is reddish, inclining to orange; which is surrounded by a bare ash-coloured skin. The crown of the head is covered with feathers of a dark blue colour, behind which there is a crescent of scarlet, with the horns pointing towards the eyes. The ears are covered with dark blue feathers, behind which they are yellow. Below the eyes, on each side of the head, is a fine scarlet; and the throat and breast are of the same colour; except that the feathers on the breast are tipped with a blackish green. The back part of the neck, the back, wings, and lower sides of the body are green, a little tinged with yellow. The feathers on the middle of the back, and on the sides of the belly, are also tipped with yellow. Some of the quills are bordered with yellow, as well as those of the bastard wing: the rest of the wing is entirely green, as are also the upper part of the tail, and its coverts. The feathers are long in the middle, and shorten gradually towards the sides. The legs, feet, and claws of this bird are of a dark ash-colour. It is an inhabitant of the East-Indies.

#### The RED-BREASTED PARROKEET.

The bill of this bird is white, inclining to yellow; with a very narrow skin on the upper-part, in which

the nostrils are situated. The upper-part of the mandible is not so hooked as in most of the Parrot kind, and the edges on the sides are waved. It has blue feathers round the bill, which extend a little way over the crown. The head is green behind, and on each side. A yellow ring encompasses the hind part of the neck, below which it is green all round. The back, rump, and upper-sides of the wings and tail are of a fine green colour. The breast is reddish, inclining to yellow: the belly, and the under-sides of the wings, are of a dark green, with a little mixture of red. The thighs, and the covert feathers under the tail, are yellow, interspersed with green. The legs, feet, and claws, are of a dusky colour. This bird is an inhabitant of the East-Indies.

#### The LONG-TAILED GREEN PARROKEET.

This bird is about the size of a thrush, and, in proportion to its bulk, has a longer tail than most of the Parrot tribe. The bill is of a flesh-colour, and the iris of the eyes of an ash-colour next the pupil, but reddish outwardly. A bare flesh-coloured skin surrounds the eyes, and the whole plumage is green, except a variety of shades inclining to other colours. It inhabits the West-Indies.

#### The GOLDEN-CROWNED PARROKEET.

The bill of this bird is black, and the upper chap is hooked at the point, having angles on the sides. At the base of the upper chap is a narrow skin of a bluish flesh colour, in which are placed the nostrils. A bare skin, of the same colour, surrounds the eyes, and the irides are of a bright orange colour. The rest of the head, the neck, back, the upper sides of the wings and tail are of a darkish green. The throat is of a yellowish green, tinged with a reddish brown; the breast, belly, and the covert feathers under the tail, are of a light yellowish green. Some of the quills between the shortest and the longest next the body, are blue on the outside; and those on the first row of the covert feathers, which fall on these, are also blue, and together form a bar of blue down the wings. The inside of the wings, and the lower side of the tail, are of an olive colour: the legs and feet are of a palish red. This Parroquet is about the size of a black-bird, and the tail alone is three inches and an half long. It is a native of Brasil.

#### The ROSE-HEADED RING PARROKEET.

The length of this bird is ten inches, from the bill to the end of the tail, of which the tail is five inches and an half. The upper chap of the bill is of a pale yellow, hooked at the point, and angled at the sides: the lower chap is of a dusky colour. The fore part of the head is of a reddish rose colour, which gradually becomes blue on the back part of the head. Below the bill, the feathers are black for the space of an inch; from which a black line extends backwards on each side, and, going round the neck, divides the head from the body. The body is entirely green, but darker on the upper side, and the belly has a yellowish cast. Some of the smaller covert feathers, on the upper part of the wing, are of a dusky red colour, and form a large spot. The inner coverts of the wings are of a yellowish green, and the quills are dusky on the inside. Some of the outer webs of the quills are of a yellowish green, and the tail consists of blue feathers, ending in points. The legs, feet and claws are of an ash-colour. This bird is an inhabitant of Bengal, in the East-Indies.

#### The LITTLE RED-HEADED PARROKEET.

This bird, which is also called the Guinea sparrow, is about five inches in length; having a short tail, with feathers of an equal length. The bill is of an orange colour, and the upper chap is hooked at the point; but there are no angles at the edges. The



nostrils are between the bill and the feathers of the forehead: the bill is encompassed with bright scarlet feathers, which extend almost to the eyes: narrow spaces of ash-coloured skin surround the edges, which are black. The back part of the head, the neck, back, and upper parts of the wings, are of a beautiful green; the throat, breast, belly, and covert feathers under the tail, are of a lighter green, with a yellowish cast. The quills of the wings are of a dark ash-colour within side. The lesser covert feathers within the wing are black, and the ridge of the wing is blue about the joint. The covert feathers on the upper side of the tail are green, and the rump is covered with fine blue feathers. The two middle feathers of the tail are green; and the rest, which consist of five on each side, are green near the bottom or roots, which is succeeded with a transverse bar of a scarlet colour; after that a narrower black bar; and the tips of the feathers are green. The covert feathers of the tail are so long, that the colours of the tail cannot be seen, except it be a little spread. The legs, feet, and claws, are of a dusky colour. This is an inhabitant of Guinea.

#### The LITTLE GREEN and BLUE PARROKEET.

The length of this bird is about three inches and an half. The bill, and the skin at the base of it, are of a gold colour, and the upper chap is hooked, and waved on the edges: the skin round the eyes, the legs, feet, and claws, are of an orange colour: the head, neck, back, and belly, are of a deep green, except the first row of the covert feathers above the quills, which is of a fine deep blue. The outer edges of the quills are of a yellowish green; the lower part of the back, and the covert feathers of the upper part of the tail, are of a sky-blue: the tail is of a bright green above, but somewhat paler underneath.

#### NATURAL HISTORY of the COMMON PIGEON.

THIS is the Pigeon domestique of Brisson. The tame Pigeon, and all its beautiful varieties, derive their origin from one species, the stock-dove; the name implying its being the stock or stem from whence the other domestic kinds have proceeded. This bird, in its natural state, is of a deep bluish ash colour; the breast is dashed with a fine changeable green and purple; the sides of the neck with a shining copper colour: the wings are marked with two black bars, one on the quill feathers, and the other on the coverts: the back is white, and the tail is barred near the end with black. These are the colours of the Pigeon in a state of nature; and from these simple tints the art of man has propagated a variety, that words cannot describe, nor even fancy suggest. Nature, however, preserves her great out-line, and though the form and colour of these birds may be altered by art, yet their natural habits and inclinations continue still the same.

This species of Pigeon is easily brought to build in artificial cavities, and, from the temptation of a ready provision, becomes domesticated without much difficulty. The drakes of the tame duck, though they vary greatly in colour, ever retain the mark of their origin from our English mallard, by the two curled feathers of the tail; and the tame goose is known to be descended from the wild kind, by the invariable whiteness of its rump, which, in both states, they always retain.

From the domestic Pigeon, many elegant varieties are produced, which are distinguished by names expressive of their several properties; such as tumblers, carriers, jacobines, croppers, pouters, runts, turbits, owls, nuns, &c. but it would be a vain attempt to

mention them all; so much is the figure and the colour of this bird under human controul; that Pigeon-fanciers, by coupling a male and female of different sorts, can breed them to a feather, as they express it.

The dove-house Pigeon breeds every month; but, when the weather is severe, or the fields are covered with snow, it is necessary to supply it with food. At other times, it may be left to provide for itself, and the owner is sufficiently repaid for affording it protection. It lays two white eggs, which usually produce young ones of different sexes. After the eggs are laid, the female continues to sit about fifteen days, relieved at intervals by the male. The turns are generally regulated with great exactness. The female continues to sit from about four in the evening till nine the next day; at which time she is relieved by the male, who supplies her place till three, while she is seeking provision abroad. Thus they alternately sit till the young are excluded. If, during this term, the female should neglect her duty, the male pursues her, and drives her to the nest: and if the male delays to return at the expected time, the female retaliates with equal severity. When the young are hatched, they require no food for the first three days, but they must be kept warm during that time, which is a duty the female takes upon herself to perform, and never leaves them, except for a few minutes to take a little food. After this they are fed for eight or ten days, with what the old ones have gathered in the fields, and treasured up in their crops, from whence they discharge it into the mouths of their young, who receive it very greedily. This method of feeding the young from the crop, in birds of the Pigeon kind, is different from all others. Pigeons, it is well known, live entirely upon grain and water: these are mixed together in the crop, and are digested in proportion as the bird lays in its provision. But when they are to feed their young, which are very voracious, they lay in a more plentiful supply, to give the food a kind of half maceration, to adapt it to their tender appetites. Nature has, for this purpose, provided a very large crop for birds of the Pigeon tribe; and some of them, which are called croppers, distend it in such a manner, that the breast of the bird seems larger than the body. The necessity for this peculiar mechanism in these animals is very obvious. The young, with open mouths, receive from the crop this tribute of affection, and are thus fed about three times a day. The male usually supplies the young female with food, and the female performs the same office for the young male. In the beginning, the young are supplied with food that is considerably macerated; but, as they grow older, the parents gradually give it less preparation, and at length send them out to shift for themselves. When they have plenty of provision, however, they do not wait for the total dismissal of their young: it is no uncommon thing to see young ones almost fit for flight, and eggs hatching, at the same time, and in the same nest.

Though the fidelity of the turtle-dove is proverbial, yet the Pigeon of the dove-house cannot boast of that constancy, having received licentiousness from man among its other domestic habits. Two males are frequently seen quarrelling for the same mistress; and sometimes two males, being displeased with their respective mates, have been known to make an exchange, and have lived with their new companions in perfect harmony.

The produce of this bird, in its domestic state, is so very extraordinary, that from a single pair, near fifteen thousand may be produced in the space of four years. The stock-dove, however, seldom breeds above twice a year; for during the winter months, they are so fully employed in providing for their own preservation, that they neglect transmitting a posterity.



posterity. But they have a stronger attachment to their young than those which often breed; owing perhaps to their affections being less divided by the multiplicity of claims.

Pigeons have a very piercing sight, and can hear at a vast distance. They are also very swift in flight, especially when they are pursued by the hawk or kite. The nature of Pigeons is to be gregarious, to bill in their courtship, and to have a mournful or plaintive note.

Any lord of a manor may build a Pigeon-house upon his land, but a tenant cannot do it without the lord's licence. When persons shoot at or kill Pigeons within a certain distance of the Pigeon-house, they are liable to pay a forfeiture.

In order to erect a Pigeon-house to advantage, it will be necessary, in the first place, to pitch upon a convenient situation, of which none is more proper than the middle of a spacious court-yard, because Pigeons are naturally of a timorous disposition, and are frightened at the least noise they hear. With regard to the size of the Pigeon-house, it must depend entirely on the number of birds intended to be kept; but it is better to have it too large than too little; and as to its form, the round should be preferred to the square ones; because rats cannot so easily come at them in the former as in the latter. It is also much more commodious; because you may, by means of a ladder turning upon an axis, visit all the nests in the house without the least difficulty; which cannot so easily be done in a square house.

In order to hinder rats from climbing up the outside of the Pigeon-house, the wall should be covered with tin plates to a certain height, about a foot and a half will be sufficient; but they should project out three or four inches at the top, to prevent their clambering any higher.

The Pigeon-house should be placed at no great distance from water, that the Pigeons may carry it to their young ones; and their carrying it in their bills will warm it, and render it more wholesome in cold weather.

The boards that cover the pigeon-house should be well joined together, so that no rain may penetrate through them. And the whole building should be covered with hard plaister, and white-washed within and without; white being the most pleasing colour to Pigeons. There must be no window, or other aperture, in the pigeon house to the eastward: these should always face the south, for Pigeons are very fond of the sun, especially in winter.

The nests or covers in a Pigeon-house, should consist of square holes made in the walls, of a size sufficient to admit the cock and hen to stand in them. The first range of these nests should not be less than four feet from the ground, that the wall underneath being smooth, the rats may not be able to reach them. These nests should be placed in quincunx order, and not directly over one another. Nor must they be continued any higher than within three feet of the top of the wall; and the upper-row should be covered with a board projecting a considerable distance from the wall, for fear the rats should find means to climb the outside of the house.

M. Duhamel thinks that Pigeons neither feed upon the green corn, nor have bills strong enough to search for its seeds in the earth; but only pick up the grains that are not covered, which would infallibly become the prey of other animals, or be dried up by the sun. "From the time of the sprouting of the corn," says he, "Pigeons live chiefly upon the seeds of wild uncultivated plants, and therefore lessen considerably the quantity of weeds that would otherwise spring up; as will appear from a just estimate of the quantity of grain necessary to feed

all the Pigeons of a well-stocked dove-house." But Mr. Worlidge and Mr. Lisle alledge facts in support of the contrary opinion. The latter relates, that a farmer in his neighbourhood assured him he had known an acre sowed with peas, and rain coming on so that they could not be harrowed in, every pea was taken away in half a day's time by Pigeons: and the former says, "It is to be observed, that where the flight of Pigeons falls, there they fill themselves and away, and return again where they first rose, and so proceed over a whole piece of ground, if they like it. Although you cannot perceive any grain above the ground, they know how to find it. I have seen them lie so much upon a piece of about two or three acres sown with peas, that they devoured at least three parts in four of the seed, which, I am sure, could not be all above the surface of the ground. That their smelling is their principal director, I have observed; having sown a small plat of peas in my garden, near a pigeon-house, and covered them so well that not a pea appeared above ground. In a few days, a parcel of Pigeons were busy in discovering this hidden treasure; and, in a few days more, I had not above two or three peas left out of about two quarts that were planted; for what they could not find before, they found when the buds appeared, notwithstanding they were hoed in, and well covered. Their smelling alone directed them, as I supposed, because they followed the ranges exactly. The injury they do at harvest on the peas, vetches, &c. is such, that we may rank them among the greatest enemies the poor husbandman meets withal; and the greater, because he may not erect a pigeon-house, whereby to have a share of his own spoils; none but the rich being allowed this privilege, and so severe a law being also made to protect these winged thieves, that a man cannot encounter them, even in defence of his own property. You have therefore no remedy against them, but to affright them away by noises, or such like. You may, indeed, shoot at them; but you must not kill them; or you may, if you can, take them in a net, cut off their tails, and let them go; by which means you will impound them: for when they are in their houses, they cannot bolt or fly out of the tops of them, but by the strength of their tails, after the thus weakening of which, they remain prisoners at home."

Mr. Worlidge, who talks of impounding the Pigeons, reminds us of a humorous story of a gentleman, who, upon a neighbouring farmer's complaining to him that his Pigeons were a great nuisance to his land, and did great mischief to his corn, replied jocularly, "Pound them, if you catch them trespassing." The farmer, improving the hint, steeped a parcel of peas in an infusion of *coccus indicus*, or some other intoxicating drug, and strewed them upon his grounds. The Pigeons swallowed them, and soon remained motionless on the field: upon which the farmer threw a net over them, inclosed them in it; and carried them to an empty barn, from whence he sent the gentleman word that he had followed his directions with regard to the pounding of his Pigeons, and desired him to come and release them.

By the 2 Geo. III. c. 29. any person who shall shoot at, or by any means kill or take, with a wilful intent to destroy any Pigeon, he shall, on conviction thereof, by confession, or oath of one witness, before one justice, forfeit twenty shillings to the prosecutor; and if not immediately paid, such justice shall commit him to the goal or house of correction, for any term not exceeding three months, nor less than one; unless the penalty be sooner paid.

The Pigeon was the favourite bird of Venus. Pigeons, says Homer, took care to provide for the nourishment of Jupiter; a fable founded on the same



same word signifying, in the Phœnician language, either a priest or a Pigeon: for it is said that the Curetes, or priests of Cybele, took care of the nourishment of Jupiter. The inhabitants of Ascalon had a sovereign respect for Pigeons: they durst not kill and eat them, for fear of feeding on their gods themselves; they brought up with great care all those that were produced in their city. Pigeons were also consecrated by the Assyrians; because they believed that the soul of their famous queen Semiramis had fled to heaven in the shape of a dove.

Silius Italicus says, that two Pigeons formerly rested on Thebes, and that one flew to Dodona, where it gave an oak the virtue of delivering oracles; the other, which was white, passed over the sea, and flew to Libya, where it settled on the head of a ram, between the two horns, and gave oracles to the people of Marmarica. The Pigeon of Dodona also delivered oracles: it was of gold, says Philostratus, settled on an oak, and surrounded by people who went thither, some to sacrifice, others to consult the oracle. There were always priests and priestesses there, who gained a good livelihood by the offerings. Sophocles says, that Pigeons of the forest of Dodona had given Hercules an oracle which determined the end of his life.

#### The CARRIER.

The Carrier, from the superior attachment it shews to its native place, is employed in many places as a most expeditious courier. These Pigeons are distinguished from all others by their eyes, which are surrounded with a broad circle of naked white skin, and by being of a dark blue or blackish colour. The upper-chap of the bill is also covered with the same kind of skin, which reaches from the base to below the middle. These birds are first brought from the place where they were bred, whither it is intended to send them back with information. The letter is tied under the wing, and the little animal is let loose to return. It no sooner finds itself at liberty, than its passion for its native spot directs all its motions. Upon these occasions it flies directly into the clouds to an amazing height; and then with the greatest certainty and exactness, directs itself by some surprizing instinct towards home, which is sometimes at a vast distance, bringing its advices to the persons to whom they are directed. How they discover the place, or by what chart they are guided in the right way, is utterly unknown to us; it is, however, certain, that in the space of an hour and an half they can perform a journey of forty miles; which the fleetest quadruped would be, at least, three times as long in performing. This practice of conveying dispatches was much in vogue in the East, and at Scanderoon, till very lately; Dr. Ruffel having assured us that the practice is now left off. It was used there on the arrival of a ship, to give the merchants at Aleppo a more expeditious notice than could be done by any other means. Anciently these birds were brought up with extraordinary care, in order to be sent from governors in a besieged city, to generals that were coming to relieve it; from princes to their subjects, with the tidings of some fortunate events; or from lovers to their mistresses with a billet-doux.

In the East they had relays of Pigeons, ready to spread intelligence to all parts of the country. When the commandant of Damietta received information of the death of Orillo, he let loose a Pigeon, under whose wing he had tied a letter; this fled to Cairo, from whence another was dispatched, as is usual; by which means, in the space of a few hours, all Egypt was acquainted with the death of Orillo. Anacreon also informs us, that he conveyed his billet-doux to his beautiful Bathyllus, by

a dove. Taurosthanes, by means of a Pigeon, which he had decked with purple, sent advice to his father, who lived in the isle of Ægina, of his victory in the Olympic games, on the very day he had obtained it. At the siege of Modena, Brutus, who was within the walls, kept a constant correspondence with Hirtius without, by the assistance of Pigeons; baffling every stratagem of the besieger, Antony, to intercept their couriers. These birds were frequently employed in the times of the crusades. Joinville relates one during the crusade of St. Louis, and Tasso another, during the siege of Jerusalem. The Carriers are about the size of a common Pigeon.

#### The RING-DOVE.

Attempts have been made to domesticate this species, by hatching their eggs under the common pigeon in Dove-houses, but as soon as they could fly, they betook themselves to the woods, where they were originally produced. The Ring-Dove is considerably larger than the former, and makes its nest of a few dry sticks in the boughs of trees. In the beginning of winter, these birds assemble in the woods in great flocks, and leave off cooing; nor do they resume this note of courtship till the beginning of March, which they continue to practise till the approach of winter. The Ring-Dove is the largest of the pigeon tribe, and may immediately be distinguished from all others by its size. It is eighteen inches in length, thirty in breadth, and weighs about twenty ounces. The head, back, and coverts of the wings are of a bluish ash-colour: the lower-part of the neck and the breast are purple inclining to red, and dashed with ash-colour. On the hind-part of the head is a semi-circular line of white, above and below which the feathers are glossy, and of changeable colours, as opposed to the light. The belly is of a yellowish white; the greater quill feathers are dusky, and the rest are ash-coloured. There is a white stroke pointing downwards, beneath the bastard wing.

#### The TURTLE-DOVE.

The Turtle-Dove is a much shyer bird than any of the former. It may readily be distinguished from the rest by the iris of the eye, which is of a fine yellow, and a beautiful crimson-circle, which encompasses the eye-lids. The fore-head is whitish; the top of the head ash-coloured, mixed with olive. On each side of the neck is a spot of black feathers, beautifully tipped with white: the back is ash-coloured, bordered with olive brown: the scapulars and coverts are of a reddish brown, spotted with black: the quill feathers are of a dusky brown; the breast of a light purplish red, the verge of each feather being yellow: the belly is white, and the sides, and inner-coverts of the wings bluish. The tail, which is three inches and a half long, has two feathers in the middle, of a dusky brown; the others being black, tipped with white. The head and exterior sides of the outward feathers are entirely white.

The fidelity of these birds is proverbial; and a pair being put in a cage, if one dies, the other will not long survive it. The Turtle-Dove is a bird of passage, and few or none remain in our northern climates in winter, unless they are kept in aviaries or cages. They fly in large flocks when they come to breed here in summer, and delight in open, mountainous, sandy countries. They build their nests, however, in the midst of woods, and select the most retired situations for incubation. They feed upon all sorts of grain, but are particularly fond of millet-seed. The Turtle-Dove is about twelve inches in length, from the tip of the bill to the end of the tail; and the breadth, when the wings are extended, is twenty-two inches. We are told by some naturalists,



ralists, that this bird lays its eggs twice a year; and if this assertion is true, it must be once with us, and once in hotter climates, for it certainly breeds here in summer.

The Turtle-Dove is the symbol of fidelity amongst friends, between husband and wife, and even of subjects towards their princes, and of armies to their generals. On the reverse of a medal of Helio-gabalus, a woman is seen sitting, holding in one hand a Turtle-Dove with this inscription, *Fides exercitus*. This symbol is founded on the male and female usually flying together, and her seeming to moan when she has lost her mate.

#### The BARBARY PIGEON.

This bird is of a dark colour, inclining to black; the bill, legs, and feet, are black; and it has a small fleshy circle round the eyes, which are of a very lively colour. There is also a tuft of feathers rising from the back part of the neck, over the top of the head. Some of this kind are also feathered on the legs and feet, but others are not. They likewise differ in colour; but those that are blackish are the most esteemed.

#### The JACOBINE PIGEON.

This bird is also called a Capper, because it has a tuft of feathers on the back-part of the head, which turns towards the neck, like the cap or cowl of a monk. The bill is short, and the iris of the eyes of a pearl colour.

#### The BROAD-TAILED SHAKERS.

A bird of the pigeon kind is thus called from having its head and neck continually in motion. The number of its tail feathers is twenty-six, and when it walks, it carries its tail upright like that of a hen. There is also a sort called narrow-tailed shakers.

#### The RUNT.

This is the greater domestic pigeon, and varies in its feathers like the common sort. It is almost as large as a pullet, and flies very slowly.

#### The TUMBLER.

Of this species there are variety of colours. When they fly, they have very extraordinary motions, frequently turning themselves in the air like a ball that is thrown up.

The pigeon called a Helmet, has the head, tail, and prime feathers of the wings of a distinct colour from the rest of the body.

#### The PICUI PINIMA.

This is about the size of a lark, and is an inhabitant of Brasil. It has a brown bill, and shaped like that of a common pigeon: the eyes are black, surrounded with a bright yellow iris: the head, the top of the neck, the back, sides, and the wing feathers are all very long, and of an ash-colour. The tail is of a brownish ash-colour; but in some they are white, and black about the middle. Those on the belly are white, with brown edges, and the legs and feet are of the same colour. The flesh of this bird is esteemed very delicate.

Mr. Ray supposes the small Barbadoes turtle to be the same with the Picui Pinima of Marcgrave; or the wild pigeon of Brasil.

#### The INDIAN TURTLE.

This bird is also called Cocolzin; it is somewhat larger than a sparrow; the upper-part of the body is covered with brown feathers edged with black. The fore-parts of the wings are partly black, and the rest is of a dusky colour. The end of the tail

No. 19.

is promiscuously tinged with white and brown and the feathers on the lower-part of the body are white, ending in black lines. The head is small, and the bill is black: the legs and feet are whitish. They make a noise when flying; and frequent mountainous places. They grow very fat, and are thought delicate food, their flesh in a great degree resembling that of the quail.

There is another Indian Turtle, called the Turtle of Aldrovandus. The female is entirely white, except the bill and the feet, the former of which is black, and the latter red. The male is of the size of a common pigeon, and of a light red colour: the iris of the eyes is of a saffron colour, with a reddish cast, and a narrow black ring surrounds the neck.

#### The MEXICAN PIGEON.

This bird is covered with dusky feathers, except on the breast, and the extremities of the wings, where they are of a dirty white. The iris of the eyes is red.

#### The RING-TIALED PIGEON of JAMAICA.

The length of this bird is fifteen inches, and the breadth twenty inches: the length of the bill is three quarters of an inch, and it has a double protuberance at the base about the nostrils. The iris of the eyes is red, and the length of the tail is about five inches. The head, neck, and breast, are covered with feathers of a purple colour, and the belly with those that are white. The upper part of the neck is a greenish purple, shining, and changeable. The back and tail are of a palish blue, and the wings are of a dusky colour.

There is another bird of this kind, that is an inhabitant of Jamaica. It is called the Bald Pate Pigeon of Jamaica, and is eleven inches in length, and eighteen in breadth: the bill is half an inch in length, red at the base, and protuberant, but white below the nostrils. In the old birds, the top of the head is white, from whence their name is derived. The body is wholly of a darkish blue, except the upper-part of the neck is of a changeable blue and green.

#### The GREENLAND PIGEON.

The eyes of this bird are black, with a yellow iris, and, on the covert feathers of each wing, it has a white spot, but is black in every other part. It has twenty-seven feathers on each wing, and its legs and feet are of a bright red.

#### The CHINESE PIGEON.

This bird, which is about the size of an Indian turtle, has a bluish ash-coloured bill, and the iris of the eyes of a fine white. The sides of the head are yellow; but the top, and the space round the eyes are of an ash-colour. The extremities of the feathers on each side of the head and neck are red, and there are blue feathers about the rise of the wings. The hind-part of the neck and back are brown, and the extremities of the feathers black: those on the shoulders are lighter, and variegated at the ends with black and white. The first and last covert feathers are black, with their external edges white; the long feathers of the wings are black, with white edges; and the breast and belly are of a beautiful pale rose-colour. The tail, which consists of twelve feathers, is a mixture of dusky and bright. The legs and feet are red, and the claws black.

To this might be added a long catalogue of foreign pigeons, of which we know little more than the plumage and the names: among these are the mawmets, the spots, the wild pigeon of the island of St. Thomas, the ocoztintzan of Mexico, the great mountain Mexican pigeon, the Portuguese pigeon, and two pigeons of Carolina, mentioned by Catesby.



## C H A P. IV.

Containing the NATURAL HISTORY of BIRDS of the SPARROW KIND, viz. the THRUSH, the BLACK-BIRD, the FIELD-FARE, the THROSTLE, the RED-WING, the STARLING, the MOCK-BIRD, the OUZEL, the NIGHTINGALE, the ROBIN-RED-BREAST, the RED-START, the SKY-LARK and its Varieties, the CANARY-BIRD, the SWALLOW, the PETTY-CHAPS, the FLY-CATCHER, the HEDGE-SPARROW, the WREN, the WHEAT-EAR, the WHIN-CHAT, the STONE-CHATTER, the WHITE-THROAT, the WATER-WAGTAIL, the GROSSBEAK, the CROSS-BILL, the BULL-FINCH, the SPARROW, the GREEN-FINCH, the GOLD-FINCH, the CHAF-FINCH, the BRAMBLING, the SISKIN, the LINNET, the BUNTING, the YELLOW-HAMMER, the REED-SPARROW, the TIT-MOUSE, the HUMMING-BIRD, and its Varieties.

**D**ESCENDING from the larger to the smaller, we come to birds of the Sparrow kind: those which compose this class live chiefly in the neighbourhood of man, and are his greatest favourites. The turkey, and other birds of the poultry kind, are more useful; but those he considers as his servants, not his friends: they are animals reclaimed merely to supply him with some of the conveniences of life; but the little painted songsters possess his esteem, which they have obtained by their melody and beauty. It is this warbling class that fills his groves with harmony, and elevates his heart to sympathize with their raptures. All other birds are either mute or screaming; and it is only this diminutive tribe that have voices equal to their beauty. All the great birds dread the vicinity of man, keep within the thickest forest, or on the brow of the most craggy precipice; but these are usually near the edges of the wood, in the neighbourhood of cultivated fields, in hedge-rows, or mixing with the poultry in the farmer's yard.

It is not indeed from affection that they approach the residence of man, they prefer inhabited grounds, because their provision is to be found there in greater abundance. In the desert or the forest, there is no grain to be picked up; and even insects, that make so great a part of their food, are not to be found in plenty; their natures not being suited to the moisture of the place. The deeper we enter into uncultivated woods, the silence becomes more profound; an awful stillness reigns throughout: there are none of those warblings that waken attention and delight the ear; nothing of that confused but pleasing buzz, formed by the united though distant voices of quadrupeds and birds; but all is profoundly dead and solemn. Indeed the traveller may sometimes be roused from this lethargy of life, by the cry of an heron, or the scream of an eagle; but his little warblers have forsaken him entirely.

Another reason why these little birds avoid the depths of the forest, is, that their most formidable enemies usually reside there.

Birds in general seem contented with a certain district to provide food and center in. Though fitted by nature for the most wandering life, these little animals seldom make such distant excursions as the stag or the leveret. Food appears to be the principal object that puts them in motion, and they never wander when that is provided for them in sufficient plenty. But, as that is seldom permanent throughout the year, birds in general are obliged to change their abode. Birds of passage are usually understood to be those that are obliged to take long journeys for this purpose; but, strictly speaking, almost every bird is a bird of passage, though they may not emigrate to places so remote. Small birds, in general, emigrate at some particular season of the year, either from one country or district to another, or towards the shore from the more inland provinces.

Many persons obtain a livelihood, by watching the seasons when our small birds begin to emigrate from one county to another, by taking them with nets in their passage. Autumn is the principal season when the bird-catcher employs his art to take these wanderers. His net is an ingenious piece of mechanism, and so contrived, as, from a flat position to rise on each side, and clap over the birds that are decoyed between them. Birds, in their passage, are always observed to fly against the wind; therefore, if it is westerly, the bird catcher, who lays his nets most to the east, is certain of the greatest sport. His call-birds generally consist of five or six linnets, two green-finches, two gold-finches, a bull-finch, a wood-lark, a red-poll, a tit-lark, and a yellow-hammer. These are placed, in little cages, at a small distance from the nets. He has also what are called flur-birds, placed upon a moveable perch, which he can raise at pleasure by means of a string; which he lifts gently up and down as the wild bird approaches. But this is not sufficient to allure the wild bird down; it must be called by one of the call-birds in the cages. It is remarkable that these call-birds delight in bringing the wild ones into the same state of captivity. The allurements of their call is so great, that the wild bird is stopped in its most rapid flight on hearing it; and, if unacquainted with the nets, boldly lights within twenty or thirty yards of the bird-catcher; who immediately embraces the opportunity, pulls a string, the nets instantly rise on each side, and clap directly down upon the unfortunate visitant. Such a fascinating power have the call-birds, that sometimes, if half the flock only are caught, the remaining half will unsuspecting light between the nets, and become captives with their companions.

It is difficult to account for the nature of this call; whether it be an invitation to food, a prelude to courtship, or a challenge to combat. Whatever is the motive, when taken, the males are made captives for singing, and the females are killed to be served up to the tables of the delicate, or the rich.

However contemptible these little creatures are to larger animals, they are frequently too formidable to each other: they are remarkably brave, and sometimes fight till one of them yields up his life with the victory. At other times their contentions are of a gentler nature. Two male birds striving in song, after a long struggle, the loudest shall silence the other entirely. The female sits an attentive silent auditor on these occasions, and, if disengaged, enters into the connubial knot with the loudest songster.

Among birds, singing is the prerogative of the male; the heaviest cares of life fall to the lot of the female. Hers is the fatigue of incubation, and to her devolves the principal labour of pursuing the helpless brood. Nature has given the song to the male, to support her under these fatigues, and to alleviate them. By that he first attracts her affections, and delights her during the time of incubation: it is also



also a note of security, to acquaint her that no danger threatens to molest her.

Little birds build a more delicate nest than those of the larger kind. As their bodies are smaller, the materials of which they compose their nests are usually warmer. Small things, we may easily conceive, cannot retain heat so long as those which are larger: the eggs of small birds therefore require a place of more constant warmth than those of large ones, as being sooner liable to cool. Accordingly their nests are made warmer and deeper, lined with softer substances in the inside, and are guarded with a better covering above. Sometimes the little architects are disturbed in their operations, and they have not time to erect another in so elegant a manner as they could wish. When the nest has several times been robbed of its eggs, it builds the last nest in a very slovenly manner, well knowing by natural instinct, that from the near approach of winter, it cannot afford time to make her habitation so commodious as it could wish. When the nest is finished, both the male and female employ great cunning to conceal it. If the little mansion is built in bushes, the pliant branches are dexterously disposed to hide it from the view; if situated among moss, nothing externally appears to shew that there is an habitation within.

All birds of the Sparrow Kind are first fed upon worms and insects. Even the gold-finch and the Sparrow, that when adult feed only upon grain, have been fed upon insects while they continued in the nest. The young require no food for some time after their exclusion from the shell; but the parent discovers, by their chirping and gaping, when they begin to feel the approaches of hunger, and flies to provide them a plentiful supply. During her absence, they preserve a perfect silence, and she announces her return by a chirrup, which they perfectly understand, and to which they immediately answer, each petitioning for its portion; and the parent distributes a supply to each by turns. The wren has been observed to feed sixteen or seventeen so regularly as not to omit a single one.

Addison is of opinion that birds observe a strict chastity of manners, which he has expressed in some beautiful Latin lines inserted in the *Spectator*.

Chaste are their instincts, faithful is their fire,  
No foreign beauty tempts to false desire:  
The snow white vesture, and the glittering crown,  
The simple plumage, or the glossy down,  
Prompt not their love. The patriot bird pursues  
His well-acquainted suits, and kindred hues.  
Hence through their tribes no mix'd polluted flame,  
No monster breeds to mark the groves with shame:  
But the chaste black-bird, to its partner true,  
Thinks black alone is beauty's favourite hue;  
The nightingale, with mutual passion blest,  
Sings to its mate, and nightly charms the nest:  
While the dark owl, to court his partner flies,  
And owns his offspring in their yellow eyes.

Naturalists, indeed, differ in opinion with the poet with regard to this fidelity among the smaller tenants of the grove: they are less true to their species than the large birds. Of the ostrich, the cassowary, and the eagle, there are but few species, and, it is probable, they could not be induced to mix with each other by all the art of man.

It is otherwise, however, with regard to small birds: very little trouble is required to make a species between a gold-finch and a canary-bird, or between a linnet and a lark. They often breed together, and produce a motley mixture, as fruitful as their parents. But though this connection may be produced by art, it probably seldom happens in a state of nature.

Such of the smaller birds as live chiefly upon insects, have slender bills; and such as feed princi-

pally upon fruits or grain, have short strong bills. Among the former are the black-bird, the thrush, the field-fare, the lark, the starling, the nightingale, the tit-mouse, the water-wagtail, the robin-red-breast, the red-start; the beccafigo, the gold-finch, the stone-chatter, the winchat, the white-throat, the hedge-sparrow, the wren, the golden crowned wren, the pettichaps, the humming-bird, and several others, which are strangers to this island.

As these birds feed principally on insects, they are of particular benefit to mankind. They clear his grounds of the pernicious swarms of vermin that devour the budding leaves and flowers, and attack even the root itself before the vegetable can come to maturity. These friendly birds also destroy the eggs of insects which would otherwise propagate in such numbers that they could not be extirpated by the arts of man. Nature directs them where to seek for them, and while they are satisfying their own appetites, they render man the most essential services. In this tribe we have also the sweetest songsters of the grove: their notes are softer, and their manner more musically soothing than the hard-billed birds. The best vocal performers of this musical tribe are the nightingale, the thrush, the black-bird, the lark, the red-breast, the black-cap, and the wren.

Birds of the Sparrow kind, with short thick bills, are the gros-beak, the bull-finch, the green-finch, the cross-bill, the house-sparrow, the gold-finch, the chaffinch, the linnet, the brambling, the yellow-hammer, the ortolan, the siskin, the bunting, the wheat-ear, and several foreign birds. These feed principally upon fruits, grain, and corn; and, as they are a numerous tribe, are often injurious to man: the harvest suffers from their depredations; and, if they are driven off from one end of the field, they immediately fly round, and come in at the other. But even these afford us pleasure to atone for the injuries we receive from them: there are some agreeable songsters in this tribe; they have a loud piercing pipe, with great modulation, variety, and perseverance. The warblers of this class, are the canary-bird, the linnet, the gold-finch, the chaffinch, the green-finch, the bull-finch, the brambling, the yellow-hammer, and the siskin.

Like the greater classes of birds, this has its wanderers, that emigrate for a season, and then return to propagate, to sing, or to embellish our fields and groves. Some disappear in one place, and are seen elsewhere, that never leave the kingdom; but others take longer flights, and go to a warmer or colder region, as it suits their constitutions: the field-fare, and the red-wing, which pass their summers in Norway, and other cold countries, are invited hither by our mild winters, and the berries which are then found in great plenty with us, and of which their food principally consists. The cross-bill, and the hawfinch have no stated times of emigration. Swallows of all kinds always disappear at the approach of winter. The nightingale, the fly-catcher, the black-cap, the wheat-ear, the willow-wren, the stone-chatter, and the winchat, depart before the approach of winter: but it is only when our winters are uncommonly severe that the siskin and the linnet forsake us. The rest of the smaller tribe reside wholly in this country, and endure the severest rigours of the climate.

The manners of our little birds do not, however, prevail in all other countries. Those kinds which are birds of passage in England, have a fixed residence in some countries all the year round; and some birds, which with us are faithful residents, in other climates, put on the nature of birds of passage, and disappear for a season.

In Upper-Egypt, and in the island of Java, the swallow breeds, and continues the whole year. Larks, which



which continue with us the whole year, are birds of passage in Sweden; forsaking that climate in winter, to return with the returning spring. The chaffinch, that resides wholly with us, appears in Carolina and Virginia during the winter; but goes in summer to breed in the more northern regions. The change of country with all this little tribe, is indeed a pilgrimage, rather than a journey; an emigration less from choice than necessity.

#### NATURAL HISTORY of the THRUSH.

**T**HE Thrush and its affinities are the largest of the sparrow kind, and are distinguished from all others of this class, not only by their size, but by their bills, which are a little bending at the point; by a small notch near the end of the upper-chap; and by the outer toe adhering as far as the first joint of the middle toe.

The missel Thrush is much larger than any of the kind: it is eleven inches in length, sixteen in breadth, and weighs about five ounces. It differs but little from that well-known bird, the throistle. The spots on the breast indeed are somewhat larger; and the inner coverts of the wings, which are white in the missel Thrush, are yellow in the throistle. The missel Thrush builds its nest in a bush, or on the side of a tree, sometimes in a thick hedge near the ground; and lays four or five eggs in a season. Its song is very fine, which it begins in spring, sitting on the summit of a high tree: but its note of fear or anger, is between a chatter and a shriek, and is extremely harsh and dissonant. Of all the feathered tribe, this is the largest that has music in its voice: those of greater magnitude can only chatter, scream, or croak. Its food are insects, holly, and the berries of misseltoe.

Thompson allows the imperfection of voice in the larger birds, but introduces them as the base in chorus, though unpleasing by itself. Thus sings that excellent poet:

The jay, the rook, the daw,  
And each harsh pipe (discordant heard alone)  
Aid the full concert: while the stock-dove breathes  
A melancholy murmur through the whole.

The outside of the Thrush's nest consists of fine soft moss, interwoven with grass, hay, &c. The inside is very curiously plaistered with cow-dung. In this the black bird differs from the Thrush, as he always lines his nest with mud or clay: the black-bird lays a covering of soft stuff on the inside, to lay her eggs upon; the Thrush deposits hers upon the bare inside or plaistering. The eggs are of a bluish colour, tinged with green, speckled with small black spots, chiefly at the largest end. The depth of the nest is about two inches and an half; the diameter of the inside, at the top, four inches. In making the nest, the bird stands within, making her own body the rule of her dimensions in building.

The young may be taken at twelve or fourteen days old, or sooner, if the weather be mild: they must be kept clean and warm, and fed with raw meat, bread, and hemp-seed bruised: the meat must be cut small, and the bread a little moistened, before they are mixed together. It is necessary that they should be fed once in about two hours.

#### NATURAL HISTORY of the BLACK-BIRD.

**T**HE Black-bird is one of the first that proclaims the welcome spring, by his shrill harmonious voice, as if he were the harbinger of nature, to awaken the rest of the feathered tribe to prepare for the approaching season. This bird is of

a very retired and solitary nature, and frequents hedges and thickets. It breeds very early in the year, and frequently has young ones by the end of March. They build a very ingenious nest: the outside consists of moss, slender twigs, fibres of roots, all very strongly cemented with clay, the inside being plaistered with clay, and lined with straw, hair, or other soft materials. It lays four or five eggs, of a bluish green colour, marked with irregular dusky spots. The Black-bird usually builds in a hedge near the ground, and before there are many leaves upon the bushes; and the nest, on account of its magnitude, may be easily discovered. The young may be taken when they are about twelve days old.

The Black-bird is the deepest toned warbler of the woods, but it is so loud in a cage as to be rather unpleasant. It begins to sing early in the spring, and continues its music part of the summer; but desists in the moulting season. It however resumes it for some time in the first winter months.

When the male has attained its full age, the colour is of a fine deep black, the bill of a bright yellow, and the edges of the eye-lids of the same colour. When young, the bill is dusky, and the plumage of a rusty black; but they attain their proper colour at the age of one year. In cold countries, and particularly upon the Alps, this bird is sometimes seen all over white, and is a beautiful and capricious bird, whistling during the whole spring and summer, with a note, which, at a distance, is the most pleasing of all the grove.

The blue-bird, described by Bellonius is, however, far superior to the Black-bird in every respect. This beautiful animal entirely resembles a Black-bird in form: it lives in the highest parts of the Alps, and chooses the most craggy rocks, and the most frightful precipices for its residence. Being seldom caught, it is in high estimation even in the countries where it breeds, but still more valuable when carried into other countries. It not only whistles in a most enchanting manner, but speaks with a distinct articulate voice. It is a very docile and diligent bird. About the beginning of winter, its colour from the blue becomes black, which changes to its original hue on the approach of spring.

Black-birds, among us, are about eleven inches in length, from the tip of the bill to the end of the tail; of which the bill is one inch, and the tail four inches: Black-birds are not taken old and tamed, but always brought up from the nest.

#### NATURAL HISTORY of the FIELD-FARE.

**F**LOCKS of Field-fares visit our islands about Michaelmas, and leave us about the beginning of March. It is imagined that those which come here, have taken the flight from Norway, and the adjacent countries, forced away by the excessive rigour of the season in those cold regions: those in the more moderate climates, as Prussia, and Austria, not only breed, but winter in those countries. With us they are insipid tuneless birds, and extremely vigilant to preserve the general safety: but in the more northern countries they sing most delightfully. They build their nests in hedges, and lay five or six bluish green eggs, spotted with black. The weight of this bird is about four ounces; the length is ten inches, and the breadth seventeen. The head is ash-coloured, inclining to olive, and spotted with black; the back, and greater coverts of the wings, are of a fine deep chestnut: the rump is ash-coloured, and the tail is black; except the lower parts of the two middle feathers, and the interior upper-sides of the outer feathers; the first being ash-coloured, and the latter white. The legs are black, and the talons are very strong. The flesh of the Field-fare is reckoned exceeding good.



## NATURAL HISTORY of the THROSTLE.

**T**HIS bird is also called the Song-Thrush, or Mavis. It is the finest of our singing birds, not only for the sweetness and variety of its notes, but for the long continuance of its harmony; as it entertains us with its song for almost three parts of the year. Like the missel-bird, it chooses to deliver its music from the top of a high-tree, but descends to some low bush or thicket to form its nest; which is composed of earth, moss, and straw, and the inside is curiously plastered with clay. It lays five or six eggs, of a pale bluish green, marked with dusky spots. The length of this species is about nine inches, the breadth thirteen inches and an half, and the weight three ounces. It breeds early in the spring, the young being frequently hatched in the beginning of April. In Silesia, these birds build their nests in April and May, on the branches of trees and shrubs in forests; and usually lay four eggs. Sometimes they repair thither from distant countries, and are so numerous in the forests and on the mountains, that they not only afford present food for the inhabitants; but they roast them, and afterwards pickle them in vinegar, in order to preserve them for future repasts: they are taken with snares made of white horse-hair, baited with berries of the white forbet-tree.

## NATURAL HISTORY of the RED-WING.

**T**HE Red-Wing greatly resembles the thrush, but is considerably smaller, weighing only two ounces and a quarter. The colours of both are nearly the same, except that the side, under the wings and the inner coverts are of a reddish orange in this bird, and yellow in the thrush. Above each eye a line of yellowish white passes from the bill to the hind part of the head. The vent feathers are white. The Red-Wing appears in Great-Britain a few days before the field-fare, and comes from the same countries in very large flocks. They have a disagreeable piping note with us, but in Sweden, they perch on the top of some tree, and sing most agreeably during the spring. They build their nests in hedges, and lay five or six bluish green eggs, spotted with black. This bird is sometimes called the swine-pipe, or wind-thrush.

## NATURAL HISTORY of the STARE or STARLING.

**T**HE Starling may be distinguished from the rest of this tribe, by the glossy green of its feathers in some lights, and the purple in others. The weight of the male species is above three ounces, and that of the female somewhat less. The length is eight inches and an half, and the breadth fourteen inches and an half. The feathers on the head, neck, and upper-part of the back are black, varied with a most beautiful green and purple as opposed to different lights. The tips of the feathers on the head are of a yellowish brown, and those on the neck are white: they are of a singular form, being long, narrow, and pointed. The lower part of the back, the rump, the coverts of the wings, and the lower part of the breast are black, glossed with green. The tips of the feathers on the breast are white, those of all the rest being yellowish; and the belly is glossed over with a deep purple. The tail is short, and the wings, when closed, reach within half an inch of the end. The legs and feet are black, tinged with red.

The Starling breeds in hollow trees, caves of houses, towers, ruins, cliffs, and frequently in high rocks over the sea. It lays four or five eggs, of a

pale greenish ash colour; and makes its nest of straw, small fibres of roots, and moss. It has a rougher voice than the rest of its kind, but the deficiency in the melody of its notes, is compensated by the facility with which it is taught to speak. These birds assemble in vast flocks in winter, and feed upon worms and insects. At the approach of spring, they assemble in fields, as if in consultation together, and seem to take no nourishment for several days: the majority of them leave the country, and the rest breed here. The flesh of the Starling is so remarkably bitter as to be hardly eatable.

This bird has naturally a wild screaming, uncouth note, but it is much esteemed for its aptness in imitating the human voice, speaking articulately, and learning to whistle a variety of tunes. A Starling, educated under a judicious master, becomes so accomplished as to be sometimes sold for five or six guineas.

Starlings may be taken at about ten days old, and may be fed in the same manner as young black-birds. The person who feeds them should, while they are eating, frequently repeat such words as he would choose to have them learn, and he will find them very apt scholars. Many persons slit their tongues, imagining it will enable them to talk more articulately, but it is a most ridiculous practice, and only tortures the poor animal without being of the least service.

Though naturally a hardy bird, it is subject to the cramp and fits, when confined in a cage. Sometimes it is so suddenly seized, that it will fall from its perch and beat itself to death in a few moments; a spider or meal-worms are a good remedy against those complaints, and should be administered twice or thrice a week; each dose to consist of about three.

## The BLACK and WHITE INDIAN STARLING.

This bird has a sharp pointed bill, thickish at the base, bowed a little downward, and of a yellowish orange: the forehead next the base of the bill above is white; but the top of the head, the throat, and neck are black, with a greenish gloss. The back, rump, the upper-part of the wings, and the tail are blackish; but the ridge of the wings next the breast is whitish, and the outer edges of the great quills are of a lighter brown than the other parts. The tips of the row of covert feathers next above the quills are white; and the breast, belly, thighs, and covert feathers under the tail are white. A line, of a palish brown colour, runs on the sides of the upper-part of the breast, forming a ring round the lower-part of the neck behind, and the legs and feet are of a reddish brown. This is an inhabitant of Bengal.

## The YELLOW INDIAN STARLING.

The bill of this bird is shaped like that of the common Starling, of a reddish brown at the base, becoming gradually more dusky towards the point. The iris of the eyes is of a hazel colour, encircled with yellow, and the pupils are black. The forehead, from the bill to the eyes, is of a bright yellow, and the eyes are surrounded with dusky feathers: the top and sides of the head are black. The throat is whitish, the breast of a light yellow; the belly, thighs, and coverts are of a deeper yellow; and the throat and breast have long dusky spots down the shafts of the feathers. The upper part of the neck, back, rump, and coverts on the upper part of the tail are of a bright yellow: the greater quills of the wings are dusky, edged with yellow on their outer webs: all the covert feathers on the upper side are yellow, with dusky spots in the middle of each. The middle feathers of the tail are dusky, tinged with yellow, having yellow tips; and the legs and feet



feet are dusky. This bird inhabits Bengal in the East Indies.

#### NATURAL HISTORY of the AMERICAN MOCK-BIRD.

**T**HIS is the favourite songster of a region, where the birds excel rather in the beauty of their plumage, than the sweetness of their notes. It is much inferior in beauty to most of the feathered inhabitants of that country, but it has qualifications that render it more amiable. It is about the size of a thrush, has a reddish bill, and the colours of its feathers are white and grey. Exclusive of its own natural notes, which are very musical and solemn, it can assume the tone of every other animal in the forest, whether quadruped or bird. It seems to delight in leading them astray. Sometimes it allures the smaller birds with the call of their males, and when they come near, it terrifies them with the screams of the eagle. It can mimic any of the feathered tribe to the greatest exactness, and there is none that has not at times been deceived by its call. Such birds, however, as we usually see famed for mimicking with us, have no peculiar merit of their own, but the Mock-Bird is ever most sure to please when it is most itself. At those times it frequently visits the houses of the American planters, and passes the whole night on the chimney-top, pouring forth the sweetest variety of notes of any of the feathered creation. So extravagant are some naturalists in their encomiums upon this bird, that the deficiency of other song birds in that country seems amply atoned for by this animal alone. It builds its nest in the fruit trees near houses, feeds upon fruits and berries, and is easily domesticated.

#### NATURAL HISTORY of the RING-OUZEL.

**T**HIS is an inhabitant of the mountainous parts of these islands, where they appear in companies of five or six. They are somewhat larger than a black-bird. In some of them the bill is wholly black, in others the upper half is yellow: there are a few bristles on each side of the mouth. The feathers on the head, and the upper part of the body, are dusky, edged with pale brown: the quill feathers, and the tail are black. The coverts of the wings, the upper part of the breast, and the belly, are dusky, slightly edged with ash colour. The breast is adorned with a white crescent in the middle, with the horns pointing to the hind part of the neck. This crescent is of a pure white in some, and of a dusky hue in others. Neither the females nor any of the young birds are possessed of this mark, which has occasioned some naturalists to form two species of them. This bird is found in Derbyshire, Yorkshire, and other places in the north of England. It is eleven inches in length, and seventeen in breadth.

#### The WATER-OUZEL.

This bird is also called the Water-Crake. It frequents small brooks, particularly those that run through a rocky country. It is of a very retired nature, and is never seen but single, or with its mate. It makes its nest in holes in the banks, and lays five white eggs, adorned with a fine blush of red. It feeds on small fish and insects; and, though it is not web-footed, and the whole form of the body denotes it to be a land-fowl, yet it will dart itself quite under the water after fish. The nest is curiously constructed of hay and the fibres of roots, and lined with oak leaves: to which it has a grand entrance made of moss. This bird is frequently seen

in the northern counties, and particularly in Wales. It is seven inches in length, and eleven in breadth, and weighs about two ounces and an half. The bill is narrow, the eye-lids are white; the head, cheeks, and hind-parts of the head, are dusky: the back, the coverts of the wings, and the coverts of the tail are also dusky, bordered with bluish ash colour: the throat and breast are white, and the belly of an iron colour. The legs are of a pale blue before, and black behind. When it is sitting, it often flits up its tail, which is short and black.

#### The INDIAN OUZEL.

In shape and size this bird resembles the jackdaw. The breast is red, and the upper part of the body entirely black, except that the feathers near the rump are edged with white. The bill is like that of the black-bird, and the tail also resembles that of the black-bird.

#### The BRASILIAN OUZEL.

This bird is of a deep red all over the body, except the tail, which is blackish. The bill is short, like that of a sparrow; the tail is long, and the feet and legs black.

The party-coloured Ouzel is principally of two colours, namely blackish, and a yellowish red. There is another, with a red line near the bill, which in other respects resembles the former.

#### NATURAL HISTORY of the NIGHTINGALE.

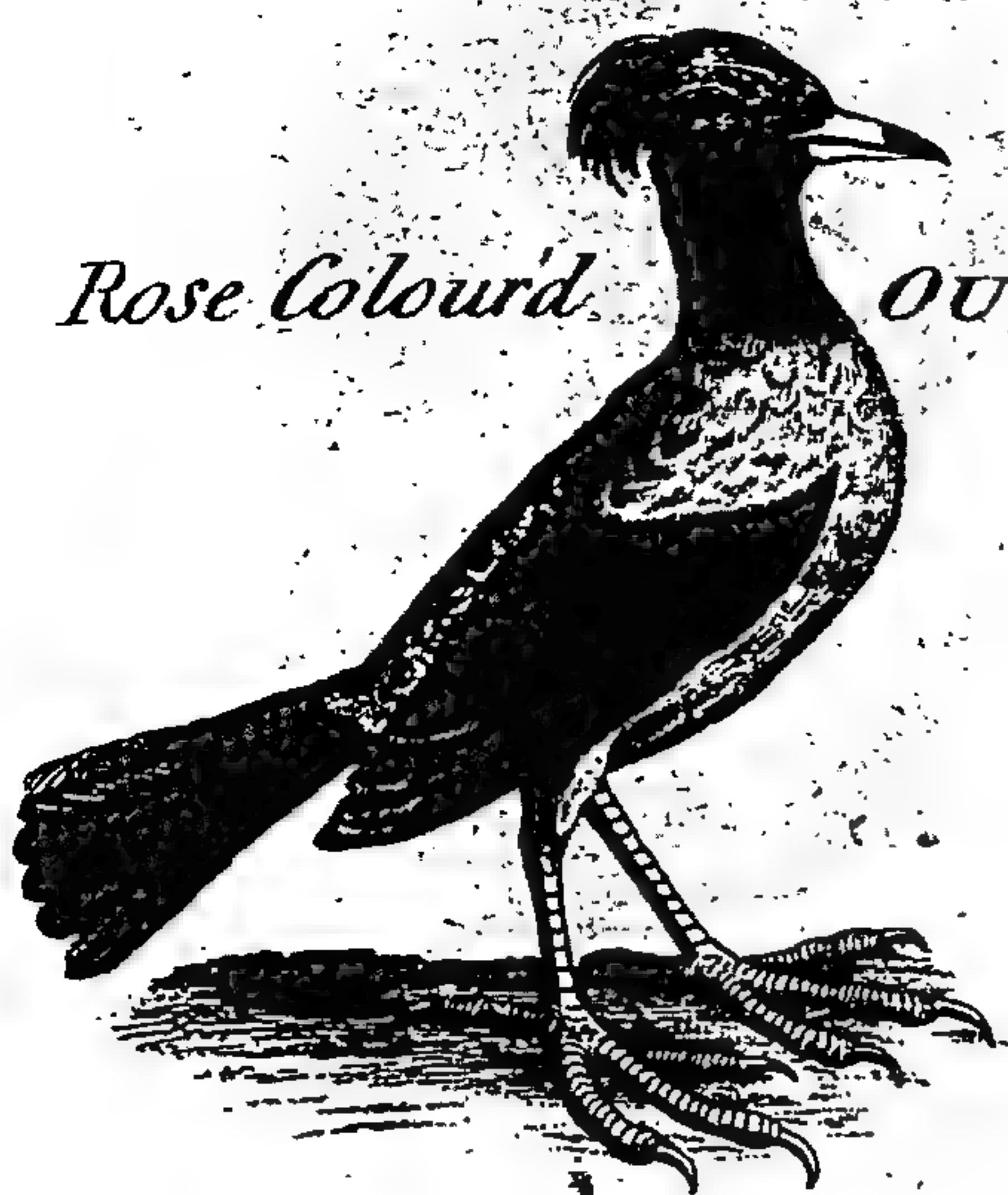
**“THE** Nightingale,” says Pliny, “that for fifteen days and nights hid in the thickest shades, continues her note without intermission, deserves our attention and wonder. How surprising that so great a voice can reside in so small a body! Such perseverance in so minute an animal! With what a musical propriety are the sounds it produces modulated! the note at one time drawn out with a long breath, now stealing off into a different cadence, now interrupted by a break, then changing into a new note by an unexpected transition, now seeming to renew the same strain, then deceiving expectation! she sometimes seems to murmur within herself; full, deep, sharp, swift, drawling, trembling; now at the top, the middle, and the bottom of the scale! In short, in that little bill seems to reside all the melody which man has vainly laboured to bring from a variety of musical instruments. Some even seem to be possessed of a different song from the rest, and contend with each other with great ardour. The bird overcome is then seen only to discontinue its song with its life.”

The Nightingale takes its name from night, and the Saxon word *galan*, to sing; expressive of the time of its harmony. It is about the size of the red-start, but slenderer, longer bodied, and more elegantly formed. The head and back are of a pale tawny, dashed with olive: the throat, breast, and upper part of the belly are of a light glossy ash colour, and the lower belly almost white. The exterior webs of the quill feathers are of a dull reddish brown: the tail is of a deep tawny red. The legs and feet are of a deep ash colour. The irides are hazel, and the eyes remarkably large and piercing.

This bird, the most celebrated of the feathered tribe, for the variety, length, and sweetness of its notes, visits England in the beginning of April, and leaves it in August. It is found only in some of the southern parts of the country; being totally unknown in Scotland, Ireland, or North Wales. With us they frequent thick hedges, and low coppices; usually keeping in the middle of the bush, and consequently are but seldom seen. They begin their song



# BIRDS.



Rose Coloured OUZELL



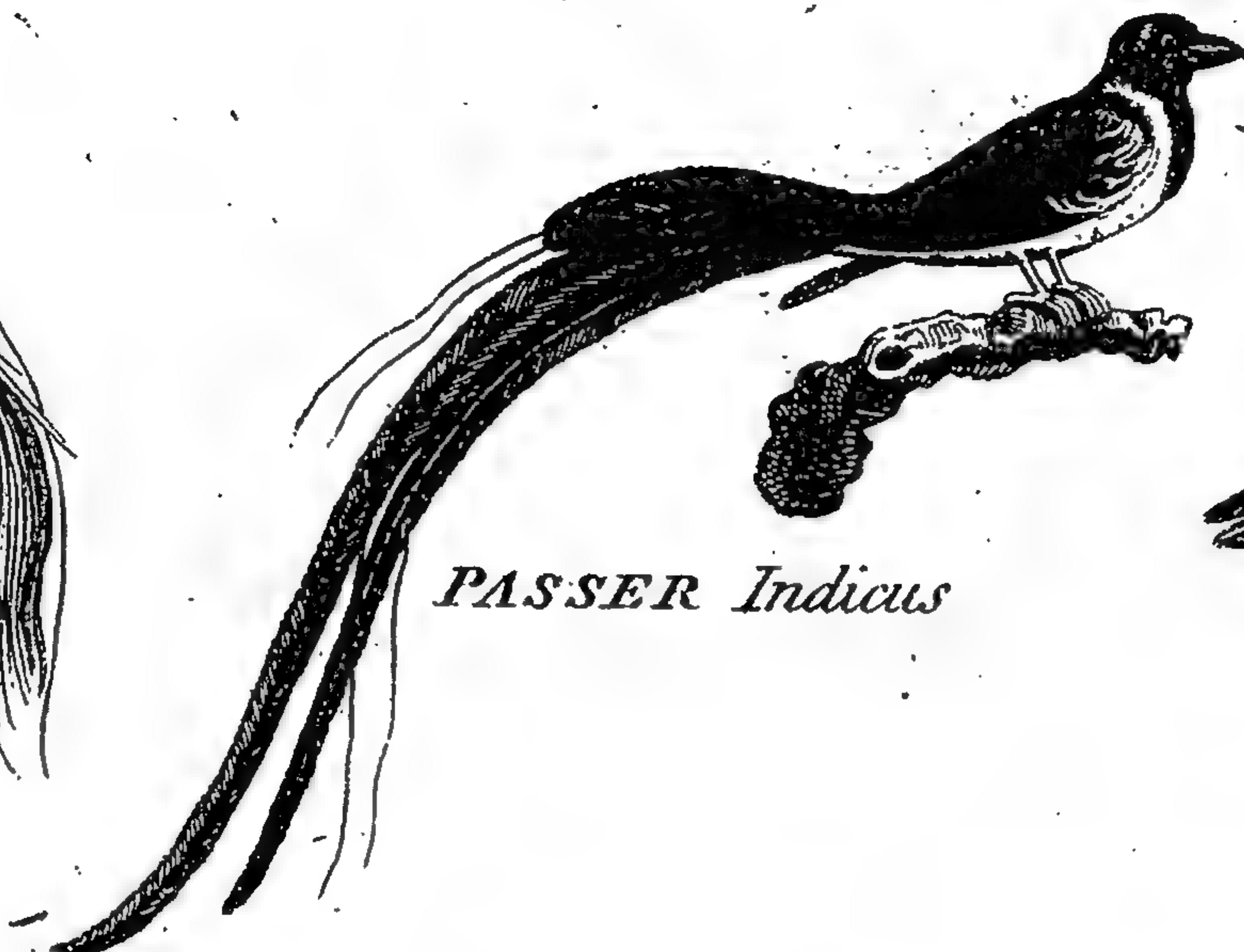
Horn OWL



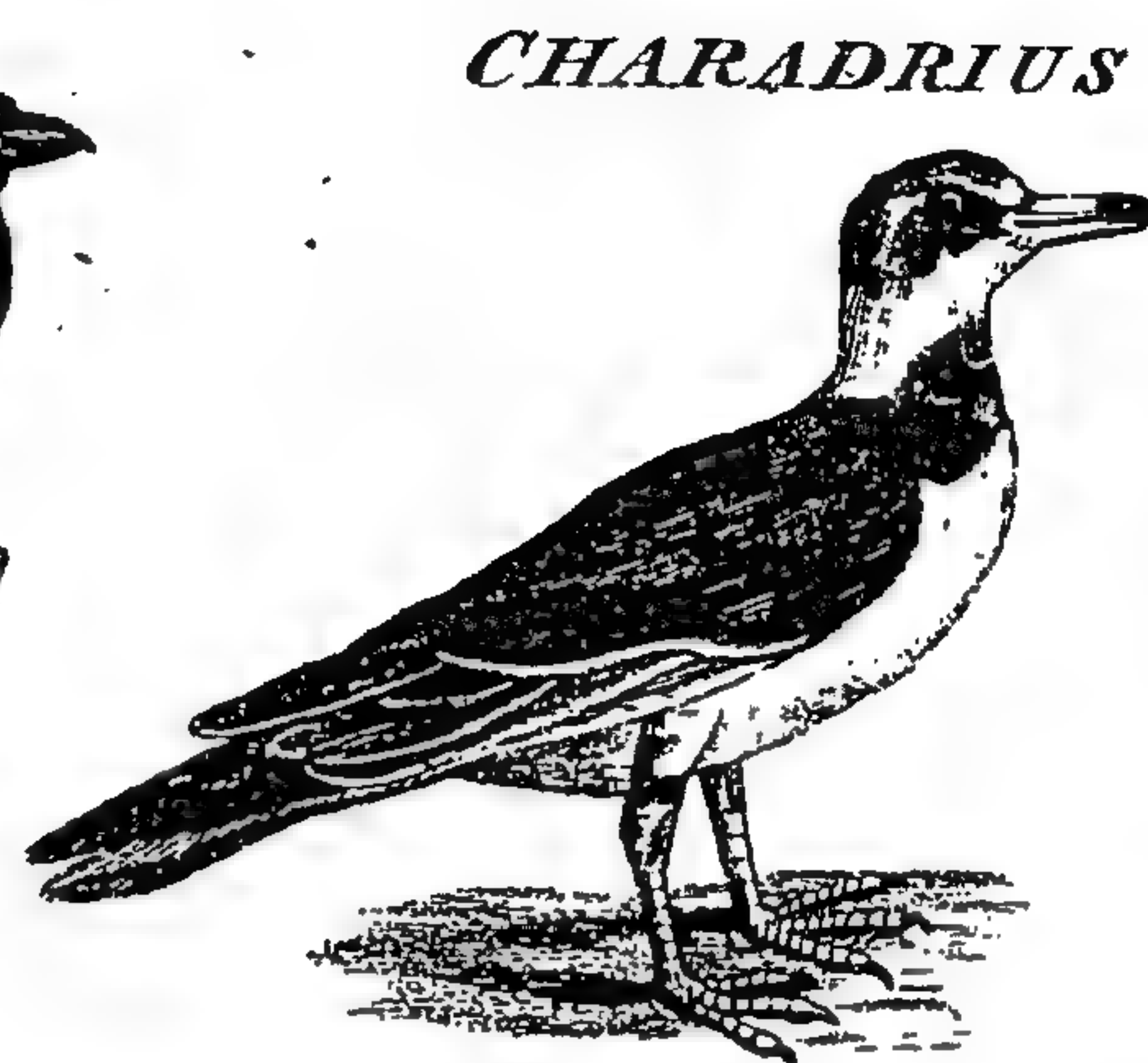
Lesser Reed SPARROW



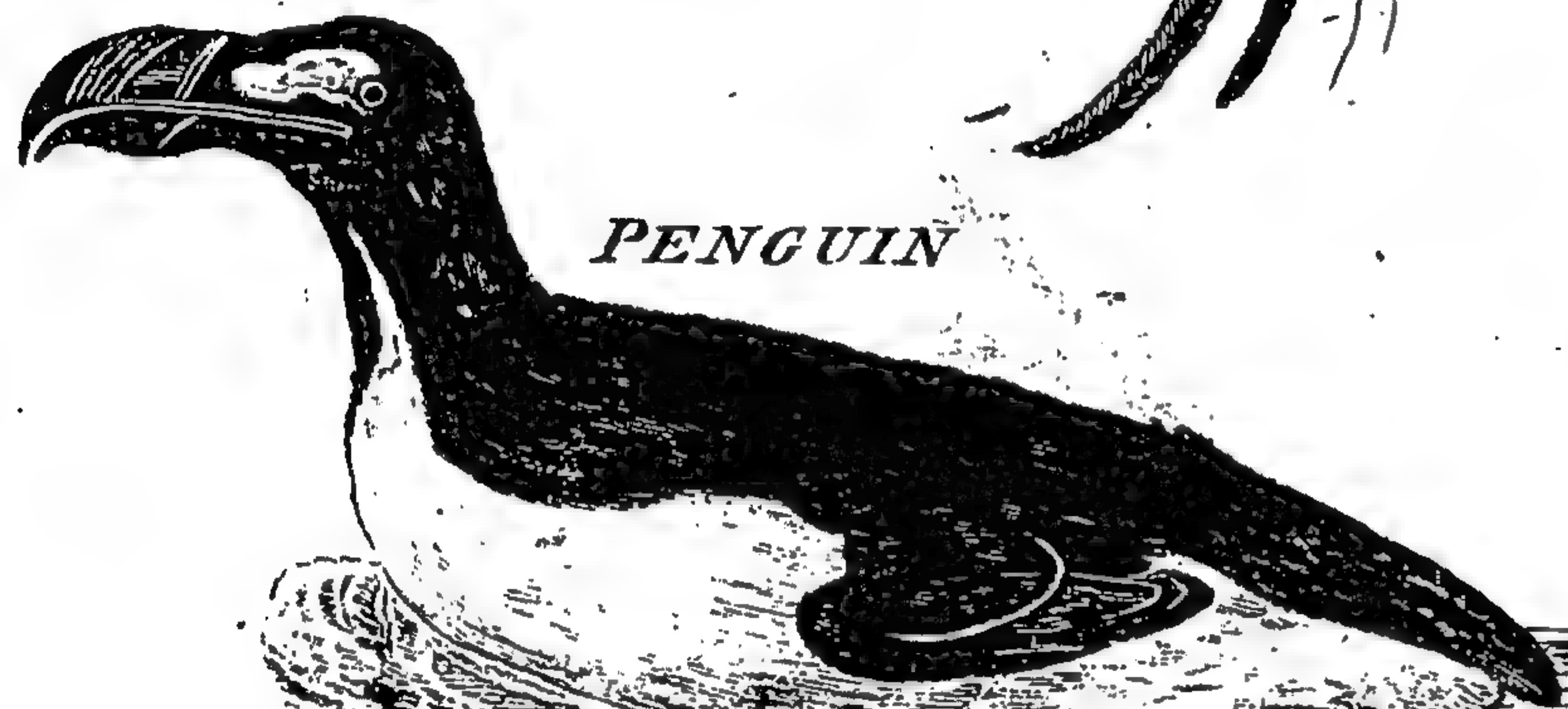
Bird of PARADISE



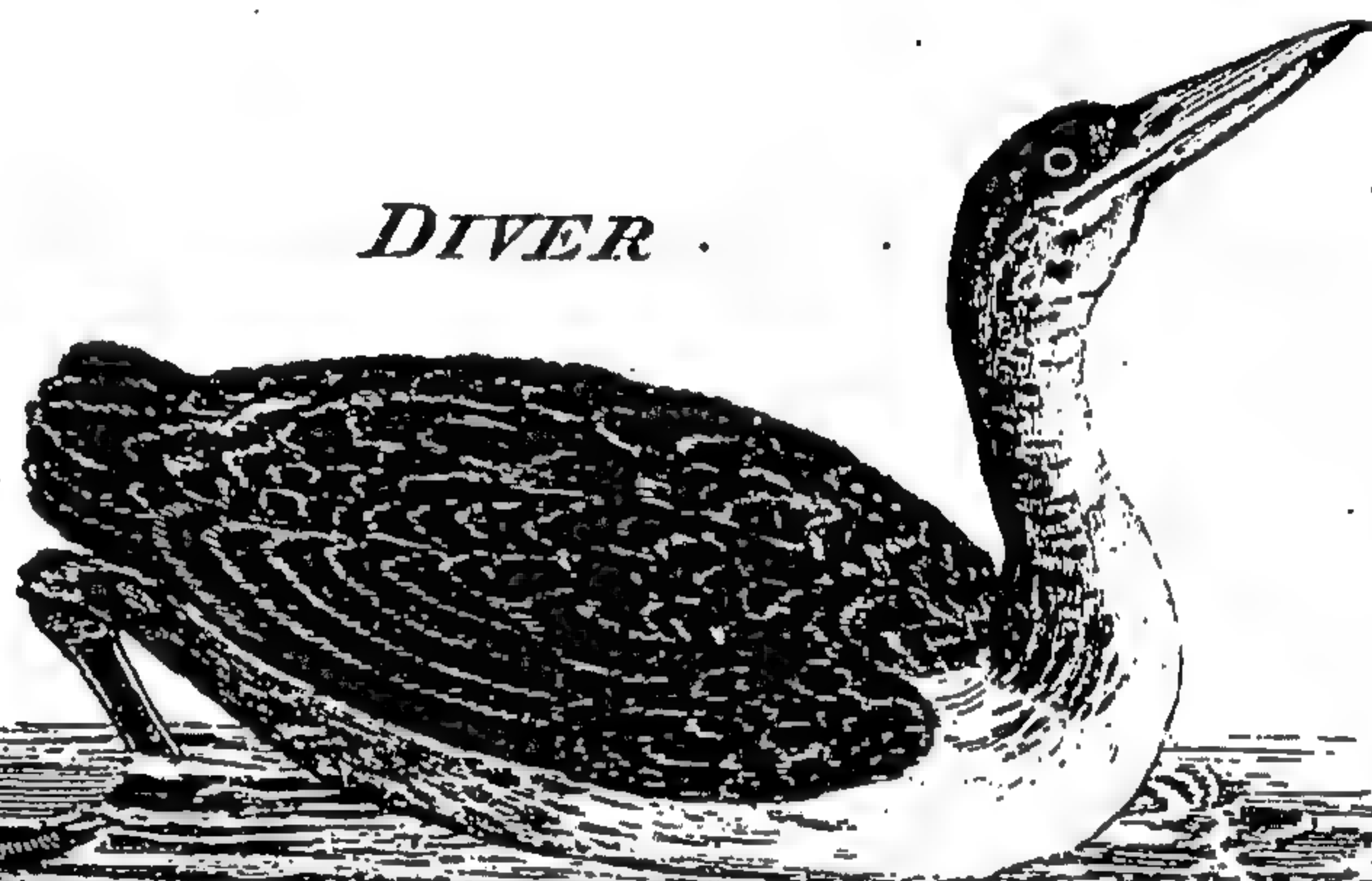
PASSER Indicus



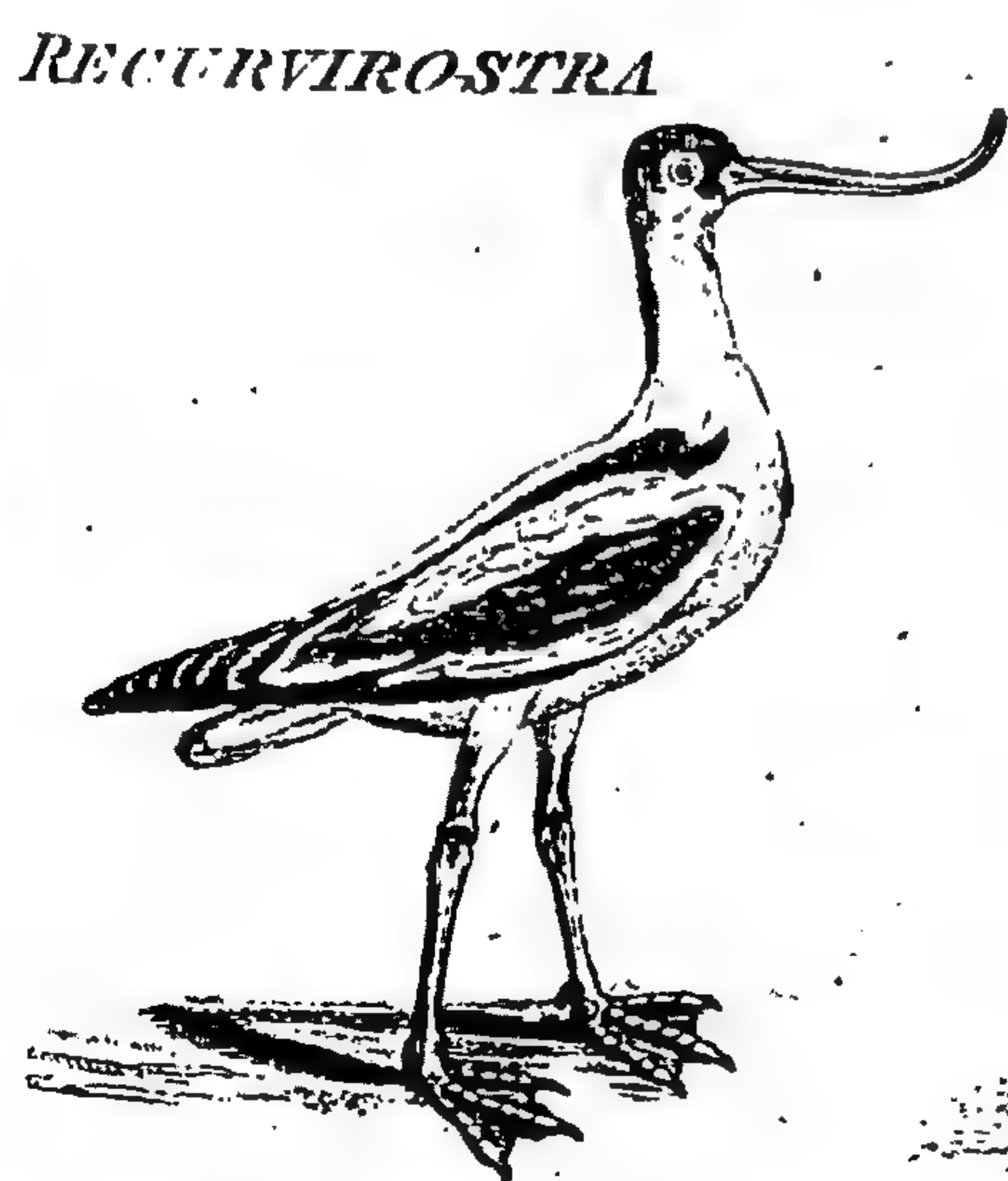
CHARADRIUS



PENGUIN



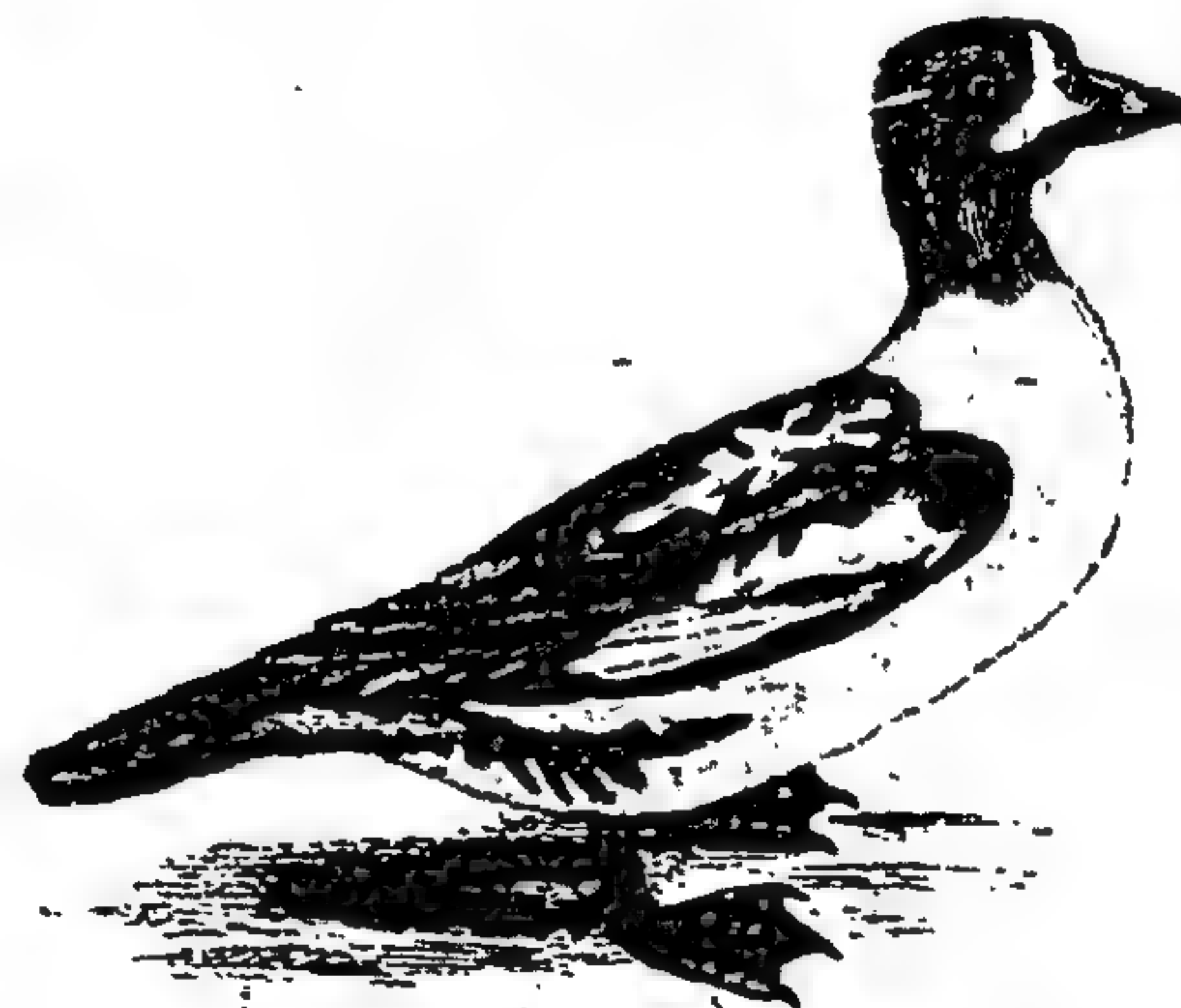
DIVER



RECURVIROSTRA



BRENT GOOSE



CLANGULA DUCK



RED SHANK



ROLLER



ROLLER or CHATTERER



2 11 11 11





song in the evening, and generally continue it the whole night. For weeks together, if undisturbed, they sit upon the same tree; and Shakespear rightly describes the Nightingale sitting nightly in the same place. The Nightingale was the favourite bird of Milton, who often introduces it, and usually expresses its love of solitude and night. He thus describes the approach of evening, and the retiring of all animals to their repose.

Silence accompanied; for beast and bird,  
They to their grassy couch, these to their nests  
Were flunk, all but the wakeful *nightingale*,  
She all night long her amorous descant sung.

Eve, in the night preceding her fall, dreams she is reproached in the following terms, with losing the beauties of the night, by indulging too long a repose:

Why sleep'st thou, Eve? Now is the pleasant time,  
The cool, the silent, save where silence yields  
To the *night-warbling* bird, that now awake  
Tunes sweetest his love-labour'd song.

Nightingales sing the nuptial song of Adam and Eve, in the following rapturous lines.

The earth  
Gave signs of gratulation, and each hill;  
Joyous the birds; fresh gales and gentle airs  
Whisper'd it to the woods, and from their wings  
Flung rose, flung odors from the spicy shrub,  
Disporting, till the amorous bird of night  
Sung spousal, and bid haste the evening star  
On his hill-top to light the bridal lamp.  
These lull'd by *nightingales*, embracing slept;  
And on their naked limbs the flowery roof  
Shower'd roses, which the morn repair'd.

From Pliny's description of the Nightingale, it might be imagined that it was possessed of a persevering strain: this indeed is the fact with regard to the Nightingale in Italy; but in our hedges in England, the little songstress is by no means so liberal of her music. Her note is soft, various, and interrupted. She so frequently pauses, that the pausing song would be the proper epithet for this bird's music with us; which is more pleasing than the warbling of any other bird, because it is heard at a time when all the rest are silent.

The Nightingale builds its nest about the beginning of May: it is composed of straw, moss, and the leaves of trees; and its situation is usually near the bottom of hedges, where the bushes are thickest and best covered. It is indeed so cunningly secreted, that it generally escapes the penetrating eye of the school-boy. The Nightingale lays four or five eggs, which are of a brown nutmeg colour; but, in our cold climate, the whole number is seldom hatched.

The sweetness of this bird's music has induced many to abridge its liberty to be secured of its song. Its notes, however, in captivity are less alluring. Gesner indeed allows it to be the most agreeable songster in a cage, and assures us that it is possessed of a most admirable faculty of talking. He even relates a long dialogue which passed between two Nightingales at an inn in Ratisbon, in which not only the human voice was most admirably imitated, but great sagacity and strength of argument were displayed on both sides. Thus it is when we have high reputation for any one quality, the world is then ready enough to give us fame for others to which we have very small pretensions.

The Nightingale seldom sings near its nest, lest it should be discovered by that means. It frequents cool and shady places, among small groves and bushes; but it delights in no high trees, except the oak. Young Nightingales should not be taken

from the nest, till they are almost as well fledged as the old ones; and though, when they are old, they are apt to be sullen, and refuse their meat, yet their mouths are easily opened; and when they are thus forcibly fed for a few days, they begin to be reconciled to their situation, and voluntarily take their food.

#### NATURAL HISTORY of the ROBIN RED-BREAST.

THE song of the Red-Breast is remarkably fine and soft; and the more to be valued, as we enjoy it the greatest part of the winter, and early in the spring. The note of other birds is louder, and their inflections more capricious: but the voice of this bird is tender, delicate, and well supported. During the spring, the Red-Breast haunts the grove, the garden, and the wood. In winter, when there is a scarcity of provision, it will even enter houses to seek its food; and is remarkably sociable with mankind, though so extremely petulant as to be at constant war with its own tribe.

The nightingale, the swallow, the tit-mouse, and most of the soft-billed birds, leave us in the winter, when there ceases to be a plentiful supply of insect food; but the Red-Breast remains continually with us, and endeavours to support the famine of winter, by chirping round the warm habitations of mankind, by coming into those shelters where the rigour of the season is artificially expelled, and where some few insects are to be found, attracted by the same cause.

In some countries, the Red-Breast builds in the crevice of some mossy bank, or at the foot of an hawthorn in hedge-rows: in others it chooses the thickest coverts, and conceals its nest with oak leaves. The nest is composed of coarse materials: the outside consists of dry green moss, intermixed with coarse wool, small dry sticks, straws, dry leaves, and peelings from young trees; with a few horse-hairs within side. It usually lays five or six eggs, which are of a cream colour, sprinkled all over with fine reddish spots; which are so numerous at the blunt end that they almost appear as one.

The bill of the Red-Breast is dusky; the forehead, chin, throat, and breast, are of a deep orange colour. The head, the hind part of the neck, the back, and tail, are of a deep ash colour, tinged with green. The wings are rather darker, with the edges of a yellowish hue. The legs and feet are dusky.

In a confined state, these birds are subject to the cramp and giddiness, for the cure of which meal-worms are effectual. There are many kinds of insects which birds will greedily devour, and which would probably relieve them under their maladies, could they be at all times conveniently procured: such as young smooth caterpillars, for a Red-Breast will not touch one that is hairy, and some sorts of spiders, ants, &c. but no insect is more innocent, or agrees better with birds in general than the meal-worm, which may at all times be procured at the meal-shops. A little liquorice, or saffron in their water, will make them long-winded, and assist them in their song. A young Red-Breast, brought up from the nest, may be taught to pipe or whistle delightfully; but an old bird is apt to be sullen, though he may be induced by degrees to exert his powers.

#### NATURAL HISTORY of the RED-START.

THIS bird appears among us only in the spring and summer, and visits us almost at the same time with the nightingale. It makes its nest in hollow



hollow trees, holes in walls, and other buildings; it is formed of moss on the outside, and lined with hair and feathers. The Red-Start lays four or five eggs, which resemble those of the hedge-sparrow, but are smaller, and of a paler blue. It is so remarkably shy, that it will forsake its nest if the eggs are only touched; and if the young ones are touched, it will either starve them, or throw them out of the nest. It has a delicate soft note; but, being a sullen bird, it is difficult to keep it alive in confinement. It will sing by night as well as by day, and will learn to whistle, and imitate other birds.

These birds breed in May, and their young are generally fit to be taken about the middle of that month. When taken young, they should be kept warm, and managed like the nightingale.

The bill and legs of the male Red-Start are black, and the forehead white. The crown of the head, the back part of the neck, and the back, are of a deep blue grey: the cheeks and throat are black; the breast, rump, and sides are red; the wings are brown, the two middle feathers of the tail are brown, and the others red. The top of the head and back of the female are of a deep ash colour; the rump and tail of a duller red than those of the male, and the breast of a paler red.

Gesner mentions three sorts of Red-Starts, one of which is the same with that which we have described above; the second has a red tail; and the third, which is seen about Strasburgh, is blue at the upper part of the breast, and of a yellowish red at the bottom: the belly is of an ash colour, and the legs brown.

#### The INDIAN RED-START.

The bill of this bird is dusky at the base, and black at the point. The top of the head is covered with long, soft, black feathers, hanging over behind in the form of a crest; and under each eye is a scarlet spot. The throat, breast, belly, and thighs are white; but the sides of the neck and breast are black. The hind part of the neck, the wings, and tail are of a dark brown; and the ridge of the wing next the breast is whitish: the feathers about the vents, and the coverts beneath the tail are of a fine red colour; but the legs and feet are black. It is a native of Bengal.

#### NATURAL HISTORY of the SKY-LARK, and its Varieties.

THE music of any bird in captivity produces no very pleasing sensations: it is but the mirth of a little animal, insensible of its unfortunate situation. It is the landscape, the grove, the contest upon the hawthorn, the fluttering from branch to branch, the soaring in the air, and the answering of its young, that gives a true relish to the song of a bird. These united, improve each other, and raise the mind to a state of the highest and most innocent exultation. How delightful to behold the Lark warbling upon the wing! raising its notes as it soars, till it seems lost in the immense heights above us; the note continuing, though the bird has disappeared! To see it afterwards descending, with a swell as it comes from the clouds, yet sinking gradually as it approaches its nest, the spot where all its affections are centered, is pleasing beyond expression.

The Sky-Lark and the Wood-Lark are the only birds that sing as they fly: the former begins its song before the earliest dawn. Milton, in his allegro, beautifully expresses this circumstance.

To hear the lark begin his flight,  
And singing startle the dull night,

From his watch tower in the skies  
'Till the dappled dawn doth rise.

The Lark builds its nest upon the ground, beneath some turf that serves to hide and shelter it: sometimes in corn-fields, or in pasture of any kind. It lays four or five brown eggs, thickly streaked with spots of a darker brown. It generally has young ones about the beginning of May: while the female is sitting, the male usually entertains her with his singing; and while he rises to an imperceptible height, he never once loses sight, either of his loved partner or the nest, while he is ascending or descending. This harmony continues several months, beginning early in the spring on pairing. In winter, when their song forsakes them, they assemble in vast flocks, grow very fat, and are taken in great numbers by the bird-catchers.

The Sky-Lark is about seven inches in length, and twelve and a half in breadth, and the weight is about one ounce and an half. The bill is slender, the upper-chap being dusky, and the lower yellow: there is a yellow spot above the edges: the crown of the head is of a reddish brown, spotted with black; and the hind part of the head is of an ash colour. It has the faculty of crecting the feathers of the head. The feathers on the back, and coverts of the wings, are dusky, edged with a reddish brown. The upper part of the breast is yellow, spotted with black; and the lower part of the body of a pale yellow. The legs are dusky, the soles of the feet yellow, and the hind-claw very long and straight. The male is distinguished from the female by being browner, and more particularly by the length of the heel or hind-claw; for Gesner affirms he has seen them above two inches long.

The young of these birds should be taken when they are about ten days old, or sooner, for they quit their nests very early.

#### The WOOD-LARK.

This bird is six inches and an half in length, from the tip of the bill to the end of the tail; and twelve inches and an half in breadth, when the wings are extended. Its weight is about an ounce and a quarter. It is inferior in size to the Sky-Lark, and of a shorter and thicker form; the colours are paler, and its note less sonorous, though not less sweet. By these and the following characters, it may be easily distinguished from the common kind: it perches on trees, and whistles like the black-bird; but the Sky-Lark always sits upon the ground. The crown of the head, and the back, are marked with large black spots; edged with pale reddish brown: a whitish coronet of feathers surrounds the head, extending from eye to eye: the throat is of a yellowish white, spotted with black; the breast tinged with red, and the belly white: the coverts of the wings are brown, edged with a dullish white: the quill feathers are dusky; the first three being white at the exterior edges, and the others yellow. In the common Lark, the first and second feathers of the wing are nearly of an equal length; but, in the Wood-Lark, the first feather of the wing is shorter than the second: the tail is black, the legs are of a cream-colour, and the hind claw is very long. Like the common Lark, the Wood-Lark will sing as it flies, and will also exert its singing faculties in the night. It builds on the ground in the same manner as the common Lark, but the species is not so numerous. The male is distinguished from the female by its superior size.

The Wood-Lark generally lays four eggs, and produces about four young ones, which are very tender birds, and difficult to be reared; and therefore should not be taken till they are well feathered: they should be kept clean and warm. Some prefer the



the singing of the Wood-Lark to the nightingale, and in the months of May, June, and July, it is often mistaken for that bird, especially in hot weather, when the sky is serene, but principally when the females are performing the duty of incubation.

This bird in its wild state feeds upon beetles, caterpillars, and other insects. Apparently sensible of its own melodious song, it will never imitate the note of another bird, unless it be brought up from the nest; then indeed it sometimes submits to learn the song of another.

#### The WHITE LARK.

This bird inhabits the mountains of Lapland, but goes into Sweden in winter. It has a short body and white wings; but the first outward feathers are black, as well as the tail, and the sides are of a pure white. Like the common sky-lark, it never perches upon trees.

#### The TIT-LARK.

The Tit-Lark frequents low marshy grounds, and, like other Larks, builds its nest among the grass, laying five or six eggs, which are of a dark brown colour; and its young are fit to take about the beginning of May. Like the wood-lark, it sits on trees, and has a remarkable fine note, greatly resembling that of the canary-bird. It is a bird of an elegant and slender shape; five inches and an half in length, and nine in breadth. The bill is black; the back and head are of a greenish brown, spotted with black; the throat, and lower part of the belly, are white; the breast is yellow, spotted with black; the tail is dusky; the claw on the hind toe is very long, and the feet are of a pale yellow. The cock is yellower than the hen, especially under the throat, on the breast, and legs.

This bird comes with the nightingale about the end of March, and goes about the beginning of September. Like the nightingale, it grows fat before it goes away. If properly attended, it is a hardy long-lived bird.

#### The CRESTED LARK.

This differs from the common Lark in being longer in the crest, in being less beautiful, in its not rising so high in the air, and in its not remaining so long there; in its not flying in flocks, and its frequenting the banks of lakes and rivers. The crest consists of about seven, eight, or nine feathers; which it can erect, spread, or contract at pleasure. The outer parts of some of the pinion feathers are of a dusky white, or cream-colour; but the throat is beautifully spotted: the breast and belly are of a yellowish white; and the tail is about two inches long, some of the outer feathers having white borders, others red, and other black.

#### The LESSER CRESTED LARK.

Mr. Ray, in his history of English birds, says this species is to be found in Yorkshire; but gives only the following brief description of it from Aldrovandus: it is like the greater crested Lark, except that it is smaller, and not so brown. For the smallness of its body, it has a considerable tuft on its head, and its legs are red. Mr. Bolton, in his list of Yorkshire birds, says this species are very numerous in that county.

#### The LESSER FIELD LARK.

This is larger than the tit-lark; the head and hind part of the neck are of a pale brown, spotted with dusky lines, which appear but faintly on the neck. The back and rump are of a dirty green; the middle of each feather of the former being marked with black, and those of the latter plain.

No. 20.

The coverts of the wings are dusky, edged with white. The throat and breast are yellow; the latter being marked with large black spots. The belly is white, and the tail is dusky. The legs are of a very pale brown; and it is strongly distinguished from the tit-lark, by the claw on the hind toe, which is extremely short for one of the lark kind.

#### The RED LARK.

This bird, which was discovered by Mr. Edwards in the neighbourhood of London, is about the size of the lesser field Lark. The head, the hind part of the neck, and the back, are of a dusky brown. A blackish line passes through each eye, and above that a clay-coloured one. The wings are of a dark brown; and the tail is of the same colour, except that the interior feathers are wholly white. The under side, from the bill to the tail, is of a reddish brown, marked with dusky spots: the legs are of a dark brown, and the hind claw is shorter than that of the common lark. When the wings are gathered up, the third quill feather from the body reaches to its tip, like that of the water-wagtail genus.

#### The BLACK LARK.

The bill of this bird is of a dusky yellow, and the iris of the eye is yellow. It is entirely of a dusky brown, inclining to black, with a reddish cast, except on the back part of the head, where there are feathers of a dusky yellow; and on the belly, where some of the feathers are edged with white. The legs, feet and claws are of a dirty yellow. This bird is not often seen in England.

#### The GRASSHOPPER LARK.

This is the bird which Mr. Ray describes as having the note of the Grasshopper, though louder and shriller. When it sings it sits on the highest branch of a bush, with its mouth open and straight up, and its wings disheveled. It is considerably smaller than the tit-lark. The bill, which is slender, is of a dusky colour: the head and the upper part of the body is of a greenish brown, spotted with black. The quill feathers are dusky, edged with an olive brown: the tail, which is very long, is composed of twelve sharp-pointed feathers; the two longest being in the middle, and the others on each side growing gradually shorter. The breast and belly are of a yellowish white; and the hind claw is shorter and more crooked than is usual among the Lark kind.

#### The WILLOW LARK.

This bird is inferior in size to the grasshopper Lark; but it has exactly the same note and actions. It is annually seen in some willow hedges in Flintshire, where it continues the whole summer. The head, back, and coverts of the wings are of a yellowish brown, marked with dusky spots: the quill feathers are dusky, except that their exterior edges are of a dirty yellow. The throat is white, and the whole under side of the body is of a yellowish white: the tail is of a dark brown; the legs are of a yellowish brown, and the hind claw is short and crooked.

#### The PETIT LARK.

This is smaller than any of the former, and has a slender sharp-pointed bill of a dusky colour. The head, the neck, the upper part of the body, and the wings, are of a dusky olive-green; but the latter are shaded with black, and have a dusky white border on the two first rows of the covert feathers: the breast, and lower parts of the body, are of a pale brown, with faintish large spots of black. The tail is about two inches long, and the outermost feathers are white about half way, with dusky edges; but the others are browner, with yellow edges. The feet are of a pale brown, and the claws are long.



## NATURAL HISTORY of the CANARY BIRD.

**B**Y the name it appears that these birds came originally from the Canary Islands, but we have them only from Germany, where they are bred in great numbers, and sold into different parts of Europe. When they were first brought into Europe, is not certainly known; but it is certain that about a century ago they were sold at very high prices, and kept only for the amusement of the great. They have since been greatly multiplied, and their price is diminished in proportion.

This bird was originally peculiar to those isles, to which it owes its name; the same that were known to the ancients by the addition of the Fortunate. The happy temperature of the air, the spontaneous productions of the ground in the varieties of fruits; the sprightly and chearful disposition of the inhabitants; and the harmony arising from the number of birds found there, procured them that romantic distinction. On the same spot these charming songsters are still to be found; but they are now so plenty among us, that we are under no necessity of crossing the ocean for them.

In its native regions, the Canary Bird is of a dusky grey colour, and so different from those usually seen in Europe, that doubts have arisen whether it be of the same species. With us they have that variety of colouring usual in all domestic fowls; some being white, others mottled, and others beautifully shaded with green; but in this country they are more esteemed for their note than their beauty, having a high piercing pipe, continuing for some time in one breath without intermission, then gradually raising it higher and higher, with infinite variety. It is certainly one of the finch tribe.

Next to the nightingale, the Canary Bird is considered as the most celebrated songster; it is also reared with less difficulty than any of the soft billed birds, and continues its song throughout the year; consequently it is rather the most common in our houses.

In choosing the Canary Bird, those are the best in health that appear lively and bold, standing upright upon the perch like a sparrow-hawk, without being intimidated at every thing that stirs. In observing him he should not be approached too near, lest a motion of the hand should disturb him; which, for a short time, will make him appear sprightly and in health; but if he is observed at a proper distance, it may soon be discovered whether it is the effect of fear, or the natural spirit of the bird. If he stands up boldly, without crouching or shrinking his feathers, and his eyes look chearful, and not drowsy, there is little doubt of his being a healthy bird; but if, on the contrary, he is apt to put his head under his wing, and stand all of an heap, he is certainly disordered.

In choosing a Canary Bird, the melody of the song should also be attended to: some of them will open with the notes of the nightingale, running through a variety of that bird's modulations, and with the song of the tit-lark. Others begin like the sky-lark, and, by a soft melodious turn, fall into the notes of the nightingale. These, however, are lessons taught the Canary Bird in its domestic state; but its natural note is loud, shrill, and piercing. Each of these songs have their admirers, but the second is most generally esteemed.

Though they sometimes breed all the year round, they most usually begin to pair in April, and to breed in June and August. The best breed is said to be produced between the English and French birds. Towards the latter end of March, a cock and hen should be put together in a small cage: though they disagree a little at first, they will soon become thoroughly reconciled. The situation of the room where

they are kept, must not deprive them of the benefit of the morning sun; and the windows should not be of glass, but where they may perfectly enjoy the benefit of the free air. The floor of the room should be kept clean, and sometimes gravel or sifted sand should be strewed over it. There should be two windows, one at each end of the room; and several perches at proper distances for the birds to settle on, as they occasionally fly backwards and forwards. Some place a tree in the middle of the room, which diverts the birds, and some of them choose to build their nests in it. But care must be taken to secure those nests from falling through; and, if they appear to be in any danger, to tie the tree closer to prevent it.

While the birds are pairing, they are usually fed with soft meat, such as bread, maw-feed, a little scalded rape-feed, and about a third part of an egg, observing to grate the bread and rape-feed very fine. Materials for making their nests, such as hay, wool, cotton, and hair, should be placed in their apartment, in so loose a manner that the birds may have no difficulty in collecting what is necessary for their purpose. The male assists the female in building the nest, and takes his turn with her in sitting upon the eggs, and feeding the young. They are usually about two or three days in making their nest, and the female generally lays five eggs, which are hatched at the end of about fourteen days. These birds are sometimes so extremely prolific, that the female will be ready to hatch a second brood, before the first are able to desert the nest. On these occasions she quits the nest and her young, in order to provide herself with another to lodge her new brood in. In the mean time, the faithful male nurses the young which are left behind, and fits them for a state of independence.

When the young are produced, the parents should be supplied with a sufficiency of soft food every day; and also with cabbage, lettuce, and chick-weed; in June, shepherd's-purse, and in July and August, plantain. They should have no groundfil after the young are excluded. With these delicacies the old ones will carefully feed their young; but when they are able to feed themselves, they are usually taken from the nest, and put into cages. Their food then is the yolk of an egg boiled hard, with an equal quantity of grated bread, and a little scalded rape-feed, bruised till it becomes fine: it may also be mixed with a little maw-feed; after which all may be blended together. They should have a fresh supply of this food every day.

These birds will produce with the gold-finch and linnet, and the offspring is called a mule-bird, because, like that animal, it proves barren.

## NATURAL HISTORY of the SWALLOW.

**T**HE Swallow-tribe are all known by their very large mouths, which are always kept open when they fly; they are equally remarkable for their short slender feet, which appear as if they were hardly able to support the weight of their bodies; their wings are immoderately long for their bulk; their plumage is glossed with a rich purple, and their note is a slight twittering, which they seldom exert but upon the wing.

The peculiar conformation of this tribe seems attended with a similar peculiarity of manners. Insects are their food, which they always pursue flying. In fine weather, therefore, when the insects are most likely to be abroad, Swallows are continually upon the wing, and pursue their prey with amazing swiftness and agility. The smaller animals in general find safety by winding and turning, when they endeavour to avoid the greater: the lark thus evades the



the pursuit of the hawk, and man the crocodile. Insects upon the wing endeavour, in this manner, to avoid the Swallow; but nature has admirably fitted this bird to pursue them through the shortest turnings. Besides the uncommon length of wing, it is provided with a long tail, which, like a rudder, instantly turns it in its most rapid motions. It is also possessed of the greatest swiftness, and the most extreme agility.

When the spring begins to rouse the insect tribe from their annual state of torpidity; when the gnat and the beetle put off their earthly robes and venture into air, the Swallow returns from its long migration beyond the ocean. At first it appears but seldom, and flies heavily and feebly; but, as the weather grows warmer, and the number of insects increases, it gathers activity and strength. A rainy season indeed, by repelling the insects, stints the Swallow in its food; it is then seen slowly skimming along the surface of the ground, and frequently resting after a flight of a few minutes. In general, however, it keeps upon the wing, and moving with amazing rapidity. When fair weather appears, the insect tribe feel the genial influence, and make bolder flights; the Swallow following them in their aerial journeys, and often rising to imperceptible heights in the pursuit. At the approach of foul weather, the insects have immediate intelligence, and from the Swallows pursuing them near the earth, we are often apprized of the change that will speedily ensue.

Among naturalists, there are three opinions concerning the manner the Swallow tribes dispose of themselves, after they have fled from the countries in which they make their summer residence. Herodotus mentions one species that resides in Egypt the whole year: Prosper Alpinus asserts the same; and Mr. Loten, late Governor of Ceylon, declares that those of Java never remove. All of the kind which we have heard of, except these, observe a periodical migration or retreat. The Swallows of Norway, North-America, Kamtschatka, the temperate parts of Europe, of Aleppo, and Jamaica, all agree in this one point.

A defect of insect food on the approach of winter in cold countries, appears a sufficient reason for the Swallows quitting them; but since it is probable that the same cause does not subsist in the warm climates, recourse should be had to some other reason for their vanishing.

The first of the three opinions has the utmost appearance of probability; which is, that they remove nearer the sun, where they can find a continual supply of their natural food, and a temperature of air adapted to their constitutions. M. Adanson has proved beyond contradiction that this is the case with some species of European Swallows. We often observe them assembled in vast flocks, on churches, rocks, and trees, previous to their departure hence; and Mr. Collinson, and many others have proved that they return in equal numbers. Sir Charles Wager gives the following account of what happened to him in one of his voyages. "Returning home," says Sir Charles, "in the spring of the year, as I came into founding in our channel, a great flock of Swallows came and settled on all my rigging; every rope was covered; they hung on one another like a swarm of bees; the decks and carving were filled with them. They seemed almost famished and spent, and were only feathers and bones; but being recruited with a night's rest, took their flight in the morning." This very great fatigue evidently proves that their journey must have been very long, considering the amazing swiftness of these birds: it is probable they had crossed the Atlantic ocean, and were returning from the shores of Senegal, or other parts of Africa.

The second opinion is supported by great anti-

quity. Aristotle and Pliny are of opinion that Swallows do not remove to any great distance from their summer habitation, but winter in the hollows of rocks, and lose their feathers during that period. Many ingenious men have adopted the former part of their opinion; and several proofs have lately been produced, that some species, at least, have been discovered in a torpid state. The honourable Mr. Dains Barrington, a few years ago, communicated the following fact to Mr. Pennant, on the authority of the late Lord Belhaven, that numbers of Swallows have been found in old dry walls, and in sand-hills near his lordship's seat in East-Lothian; not once only, but from year to year. The following account of some Swallows on the Rhine, was communicated to Mr. Peter Collinson, by Mr. Achard, and was read before the Royal Society the twenty-first of April, 1763.

"In the latter end of March," says Mr. Achard, "I took my passage down the Rhine, to Rotterdam. A little below Basil, the south bank of the river was very high and steep, of a sandy soil, sixty or eighty feet above the water.

"I was surprized at seeing, near the top of the cliff, some boys, tied to ropes, hanging down, doing something. The singularity of these adventurous boys, and the business they so daringly attempted, made us stop our navigation, to enquire into the meaning of it. The watermen told us, they were searching the holes in the cliff for Swallows or martens, which took refuge in them, and lodged there all the winter, until warm weather, and then they came abroad again.

"The boys, being let down by their comrades, to the holes, put in a long rammer, with a screw at the end, such as is used to unload guns; and, twisting it about, drew out the birds. For a trifle I procured some of them. When I first had them, they seemed stiff and lifeless. I put one of them in my bosom, between my skin and shirt, and laid another on a board, the sun shining full and warm upon it; and one or two of my companions did the like.

"That in my bosom revived in about a quarter of an hour: feeling it move, I took it out to look at it, and saw it stretch itself upon my hand; but perceiving it not sufficiently come to itself, I put it in again: in about another quarter, feeling it flutter pretty briskly, I took it out and admired it. Being now perfectly recovered, before I was aware, it took flight; the covering of the boat prevented my seeing where it went. The bird on the board, though exposed to a full sun, yet I presume, from a chillness of the air, did not revive so as to be able to fly."

Such is Mr. Achard's account, on which the following observations were made by Mr. Collinson.

"What I collect from this gentleman's relation, is, That it was the practice of the boys, annually to take these birds, by their apparatus and ready method of doing it; and the frequency of it was no remarkable thing to the watermen. Next, it confirmed my former sentiments, that some of this Swallow-tribe go away, and some stay behind, in these dormitories, all the winter. If my friend had been particular, as to the species, it would have settled that point."

We cannot but assent to the above circumstances, though seemingly contradictory to the common course of nature in regard to other birds. We must therefore divide our belief respecting these two very different opinions, and conclude, that one part of the Swallow-tribe emigrate, and that others have their winter quarters at home.

The third notion is too amazing and unnatural to merit the least attention. The first who broached the opinion of Swallows passing the winter immersed under ice, at the bottom of lakes, or beneath the water of the sea, was Olaus Magnus, archbishop of Upsal,



Upfal, who very gravely informs us that they are frequently found in clustered masses at the bottom of the northern lakes, mouth to mouth, wing to wing, foot to foot; and that they creep down the reeds in autumn to their subaqueous retreats. That when old fishermen discover such a mass, they throw it again into the water; but when young inexperienced ones take it, they will, by thawing the birds at a fire, bring them indeed to the use of their wings, which will continue but a very short time, being owing to a premature and forced revival.

Credit has been given to the submersion of Swallows by some of our own countrymen; and Klein strongly patronizes this doctrine. He relates the following history of their manner of retiring, which he received from some countrymen and others. They asserted that sometimes the Swallows assembled in numbers on a reed, till it broke and sunk with them to the bottom; and before their immersion they had a dirge of a quarter of an hour's length. That others would unite in laying hold of a straw with their bills, and so plunge down in society. Others again would form a large mass by clinging together with their feet, and in that manner commit themselves to the deep.

When the summer is fairly begun, and more than a sufficient supply of food presents itself, the Swallow then begins to think of forming a progeny. The nest is built with great industry and art, particularly by the common Swallow, which builds it on the tops of chimneys. The martin fixes it to the eaves of houses, or against the sides of lofty door-posts. The goat-sucker, it is said, builds it on the bare ground. The nest is built with mud, well tempered with the bill, moistened with water for the better adhesion; and strengthened by grass and fibres: within it is lined, with a door to enter at on one side, not far from the bottom; but the Swallow leaves her nest quite open.

The Swallow lays five or six white eggs, speckled with red, and sometimes breeds twice a year. This happens when the parents come early, when the season is peculiarly mild, and when they begin to pair soon. Sometimes they find a difficulty in rearing even a single nest, especially when the weather has been severe, or the nests have been destroyed before they were finished.

The house, or common Swallow, is distinguished from all others, by the extreme forkyness of its tail, and by the red spot on the forehead and under the chin. The crown of the head, the upper part of the body, and the coverts of the wings are black, glossed with a rich purplish blue. The breast and belly are white tinged with red: the tail is black, and the two middle feathers plain: the others being marked transversely with a white spot near their ends. The tongue is short, broad, and of a yellowish colour, as well as the palate; but the other parts of the mouth are blackish. The eyes are pretty large, and the iris is of a hazel colour.

When Swallows have returned at their usual time, after a severe winter, many of them have perished for want of food, because there were no insects to be found flying in the air. Reaumur assures us, that the Swallows which appeared first after the long and severe frost in 1740, all died of hunger. Hence it is evident they always frequent places where they expect plenty of food; and therefore they leave us when the insects that fly the air begin to fail.

#### The MARTIN.

The Martin is smaller than the former, and its tail is much less forked. The head, and upper part of the body, except the rump, is black, glossed with blue: the breast, belly, and rump are white; and the feet are covered with a short white down.

This is the second of the swallow kind that appears among us. It builds, as we have already observed, under the eaves of houses, and its nest consists of the same materials as that of the common swallow, but is not open above like that, having only a small hole at the side for admittance. This species sometimes builds against the sides of high cliffs over the sea. It is a later breeder than the common swallow. This bird is about six inches in length, and ten and an half in breadth, when the wings are extended.

#### The SAND MARTIN.

This is the least of the swallow kind, being only five inches and a quarter in length. The head, and all the upper part of the body, is mouse-coloured: the throat is white, encircled with a mouse-coloured ring: the belly is white, and the feet are smooth and black. It builds in holes in sand-pits, and in the banks of rivers, making its nest of hay, straw, and feathers; and lays five or six white eggs.

#### The SWIFT or BLACK MARTIN.

This species is the largest of the swallow kind; but its weight is exceeding small in proportion to its extent of wing: for it only weighs one ounce, and the extent of its wings is eighteen inches: the length of the bird is about eight inches. The feet are so exceeding small, that the action of walking and rising from the ground is vastly difficult: nature, however, has made it sufficient amends, by furnishing it with ample means for an easy and continued flight. It is more on the wing than any other swallow, and its flight is more rapid. It breeds under the eaves of houses, in steeples, and other lofty buildings. It is entirely of a sooty colour with a greenish cast, except that the chin is marked with a white spot. The legs are not only very short and small, but of a very singular structure. The toes, which are four in number, are all placed forward, and the least has only one bone, but the rest have three; in which they differ from those of all other birds. The head is large, the mouth extremely wide, and the bill is very small and weak. It is with difficulty that this bird can raise itself from the ground, on account of the length of its wings, and the shortness of its feet; for which reason it generally rests by climbing against some wall or other building, from which it can easily disengage itself.

The Swift makes its appearance in this country about fourteen days after the sand-martin; but differs greatly in the time of its departure, always retiring about the middle of August, it being the first of the genus that leaves us.

#### The CHINESE SWALLOW.

This bird resembles the common swallow in shape, and, in breeding time, quits the inland parts and goes to the sea side; where it builds an extraordinary nest, which is reckoned delicious eating in China. These nests are sometimes preserved as a sweetmeat, and sent over to Europe as a great curiosity. They are composed of a certain clammy glutinous substance, collected from the surface of the sea; and in these the Swallow lays its eggs and produces its young. We have no particular description of this bird, but the Chinese carry on a considerable trade in their nests, and sell them in many parts of the East Indies. They are about the size of a goose-egg, and of a substance resembling isinglass. It is customary to dissolve one of these nests in broth, and then it is thought preferable to any sauce that can be produced.

#### The AMERICAN SWALLOW.

This bird, according to Catesby, has the top of the



the throat of a brownish black, and the extremities of the feathers of the tail are pointed. They quit Virginia and Carolina, and return about the same time of the year as the English swallows. Catesby supposes they pass to the southern parts in the winter, and that they are properly the Brasil swallow.

#### The GOAT SUCKER.

This bird is, with great propriety, placed by Klein, among the swallow tribe; who calls it a Swallow with an undivided tail. It has most of the characters of this genus, such as a very large mouth, a very small bill, and very small legs. It is also a bird of passage, agrees with the swallow tribe in its food, and the manner of taking it: but it differs in the hours of its preying, the Goat-Sucker flying by night. It feeds on moths, gnats, and chaffers. This bird does not continue long with us; it never makes its appearance here till about the latter end of May, and retires about the middle of August. These birds are often seen in the woody and mountainous parts of Great Britain; they begin their flight towards the evening, and make a loud and singular noise while they are on the wing. When perched, it has no other note than a small squeak repeated four or five times together. It usually lays two eggs, and sometimes three, on the bare ground: they are long, slender, and whitish, marbled with reddish brown.

Though the colours of these birds are plain, they have a beautiful effect from the elegance of their disposition, consisting of black, brown, grey, white, and iron colour, disposed in streaks, spots, and bars. The male is distinguished from the female, by an oval white spot near the end of each of the three first quill feathers; and another on the two outermost feathers of the tail.

The weight of the Goat-Sucker is two ounces and an half, the length ten inches and an half, and the breadth twenty-two inches. The irides are hazel: the bill is about one third of an inch long; the gape of the bill, when opened, is near two inches from tip to tip: the tongue is very small, and placed low in the mouth: the legs are small, scaly, and feathered below the knees. The middle toe is connected to those on each side, by a small membrane reaching to the first joint; the claw of the middle toe is broad and thin.

#### The BLACK CAP.

This is one of the smallest of the tribe, and does not weigh above half an ounce. The male is black on the crown of the head, and the hind part of the neck is of a light ash colour. The back and coverts of the wings are of a greyish green: the quill feathers and the tail are dusky, edged with a dull green: the breast and the upper part of the belly are of a pale ash colour, and the legs are of a lead colour. The female is distinguished from the male by the spot on the head, which in that of a dull rust colour. This is a bird of passage, leaving us before winter. It sings so finely, that in Norfolk it is called the mock-nightingale. It lays about five eggs of a pale reddish brown, mottled with a deeper shade, and sprinkled with a few dark spots.

#### NATURAL HISTORY of the PETTY CHAPS.

THIS bird is not quite so large as the linnet: the bill is black; the head, neck, back, wings, and tail are ash coloured inclining to green: the quill feathers are of a mouse colour, edged with green. The inner coverts of the wings are yellow. The lower parts are all white, or of a silver colour; except the breast, which is darker, and has a yellowish cast. The inside of the mouth is red, and the legs are of a lead colour. This bird is found principally

in Yorkshire, and Italy; and among the Italians it is called the Beccafigo.

#### NATURAL HISTORY of the FLY-CATCHER.

THE weight of this bird is about twelve drams: it has an oblong bill, of a reddish tawny colour: its head is of a deep brown, mixed with ash colour, and the cheeks are marked with oblong spots of a dirty-white. The back and coverts of the wings are dusky, edged with reddish brown. The quill feathers and the tail are dusky: the rump is brown, tinged with green: the throat and the breast are of a dull ash colour; the belly is of a dirty white; and the sides, thighs, and vent feathers are of a pale tawny brown. The legs and feet are of a dark flesh colour. This bird frequents low hedges, particularly in gardens. It builds its nest in a small bush, and lays four or five eggs of a fine pale blue colour. The male has a short, and very sweet note, but only during a few months in the spring.

#### The BLUE FLY-CATCHER.

The bill of this bird is black; the crown of the head, the back part of the neck, the back, rump, and covert feathers of the wings are blue, inclining to slate colour; the tail, and quill feathers of the wings are dusky, but the outer quills are white at the bottom: the throat, and sides of the head, are black, and the same colour extends from each side of the neck to the wings: the covert feathers under the tail are entirely white, and the legs and feet are of a dusky brown colour. It is a native of America, and probably a bird of passage.

#### NATURAL HISTORY of the HEDGE-SPARROW.

THE weight of this bird is about twelve drams: its head is of a deep brown, mixed with ash colour, and the cheeks are marked with oblong spots of dirty white; the back and coverts of the wings are dusky, edged with reddish brown; the quill feathers and the tail are dusky; and the rump is brown, tinged with green. The throat and breast are of a dull ash colour, and the belly is of a dirty white. The sides, thighs, and vent feathers are of a pale tawny brown. The legs are of a dull flesh colour. This bird is as well known as any of our small birds, and it builds so conspicuously in small bushes, that any boy who searches the hedges, can give an account of its nest, eggs, &c. It lays four or five eggs, of a fine pale blue colour. The male has a short, but very sweet note during a very small space in the spring. Linnæus seems to have been unacquainted with this species: the bird which he supposes to be our Hedge-Sparrow, and describes under the title of *motacilla curruca*, differs in colours of plumage as well as eggs. The Hedge-Sparrow ought to be more esteemed, as he has a variety of agreeable notes: many persons, who have kept them in cages, have been much delighted with their singing; but these birds are less valued on account of their being so exceeding plenty, as we perceive by daily experience, with regard to many other articles of convenience or pleasure. The hen is known from the cock by a fainter breast, and by being of a brighter colour on the back. The nest of the Hedge-Sparrow consists of fine green moss, plaited with a little wool and hair. The female has young ones at the end of April or the beginning of May. The young should be taken at nine or ten days old, and fed with bread and flesh-meat chopped very fine, mixed together, and made moist. If the cock Hedge-Sparrow is brought up under some fine song bird, he will take his song, and give great satisfaction: this bird has a long slender black bill,



with a horny cloven tongue, and black at the tip. The iris of the eyes is hazel, and the ears are wide.

#### NATURAL HISTORY of the WREN.

**T**HE Wren weighs about three drams, and is four inches and an half in length from the tip of the bill to the end of the tail. The head and upper part of the body is of a deep reddish brown; and above each eye is a stroke of white: the back, the coverts of the wings, and the tail, are marked with slender transverse black lines; and the quill feathers with bars of black and red. The throat is of a yellowish white. The belly and sides are crossed with dusky and pale reddish brown lines. The tail is crossed with dusky bars. The Wren may be placed amongst the finest of our singing birds, though its note continues only during the breeding season. It makes a curious nest of an oval shape, very deep, and with a small hole in the middle for egress and regress: the external part consists chiefly of moss, but it is lined with hair and feathers: this bird lays a great number of eggs, generally from twelve to eighteen; they are white, sprinkled all over with pale reddish spots. Mr. Ray observes, that it is one of those daily miracles which we take no notice of, that a Wren should produce so many young, and feed them all without passing over a single one, and that too in total darkness. The Wren breeds twice a year, namely in April and June, and the young should be fed and reared like young nightingales.

The Wren usually creeps about hedges and holes, making but short flights, and, if it be driven from the hedges, may be easily tired and run down.

#### The WILLOW-WREN.

The weight of the Willow-Wren is about two drams: the upper part of the body is of a dusky green: the wings and tail are brown, edged with yellowish green. There is a yellowish stroke above each eye: the breast, belly, and thighs vary in their colour in different birds; they are of a bright yellow in some, and almost white in others. It builds in hollows in the sides of ditches, and makes its nest in the form of an egg, with a large hole at the top as an entrance: the outside consists of moss and hay, and the inside is lined with soft feathers. It usually lays seven eggs, which are white marked with rust coloured spots. It has a low plaintive note, and is perpetually creeping up and down the bodies and boughs of trees. It frequents large moist woods, and those places where willow trees abound.

#### The GOLDEN CRESTED WREN.

This is the smallest of all the British birds, not weighing above twenty-six grains. It is about three inches and an half in length, and five inches in breadth: it is distinguishable from all other birds, not only by its size, but by the beautiful scarlet mark on the head, bounded by a fine yellow line on each side. The bill is dusky; the feathers of the forehead are green; and a narrow white line extends from the bill to the eyes: the hind part of the neck and the back are of a dullish green: the coverts of the wings are dusky, edged with green, and tipped with white. The quill feathers and the tail are dusky, edged with pale green. The throat and belly are white, tinged with green: the legs are of a dull yellow, and the claws are very long. It frequents woods, and is usually seen in oak trees. Though so very small a bird, it endures our winters. The note of this Wren, does not differ greatly from that of the common Wren.

#### The RUBY-CROWNED WREN.

This is a native of North America, particularly of Pennsylvania. The bill is black: the head, back part of the neck, back, and rump are of a darkish olive green; but deeper on the head, and lighter on the rump. It has a spot of exceeding fine red, or ruby colour, on the top of the head, from whence this bird has its name: the breast and belly are of a lightish yellow, or cream colour. The covert feathers of the wings are of an olive colour with cream coloured tips, forming two lines across each wing: the three quills next the back are dusky, edged with cream colour; the remainder of the quills are also dusky, with narrow greenish yellow edges. The feathers of the tail are blackish, edged with yellowish green, but they are of an ash colour beneath. The legs, feet, and claws are dusky.

#### The CARIBBEE WREN.

This is a native of the Caribbee islands in America, where, on account of its delightful note, it is called a Nightingale. It is larger than the common Wren, and is the more remarkable for having a fine song in a country where the birds in general have very disagreeable notes.

#### NATURAL HISTORY of the WHEAT-EAR.

**T**HE head and back of the male Wheat-Ear, are of a light grey, tinged with red; and over each eye passes a white line; beneath which a broad black stroke passes each eye to the hind part of the head: the rump, and lower half of the tail are white, and the upper half is black; the breast and belly are white, tinged with yellow: the quill feathers are black, edged with reddish brown. The colours of the female are duller, and she wants the black stroke across the eyes. The Wheat-Ear disappears in September. This bird has its name, in Suffex, from its frequenting the downs in that county in the time of harvest.

These birds begin to visit us about the middle of March, and continue coming till the beginning of May; it being very remarkable that the females arrive about a fortnight before the males. They frequent warrens, downs, and the edges of hills, especially those that are fenced with stone walls. They breed in cliffs, in old rabbit burroughs, and sometimes under old timber; making their nest of dried grass and horse-hair; and laying from six to eight eggs of a light blue colour. They grow very fat in autumn, and are thought so great a delicacy as to be little inferior to an ortolan. They are taken in great quantities by the shepherds about East Bourne, in Suffex; for which purpose they make snares of horse-hair, and place them under a turf. Wheat-Ears are such very timid birds, that the motion of a cloud, or the appearance of a hawk, will drive them into those traps for shelter, by which means they are taken. The reason that these birds frequent the neighbourhood of East Bourne, is because it abounds with a certain fly which are very numerous about the adjacent hills; drawn thither by the wild tyme with which they are covered, which is not only a favourite food of that insect, but the plant on which it deposits its eggs.

Wheat-Ears abound in many other parts of Suffex, as well as in the neighbourhood of East-Bourne. In the downs not far distant from Brighthelmstone, Shoreham, and Arundel, they are found in great numbers; and, during the watering season at Brighthelmstone, the ladies and gentlemen, in their perambulations, frequently find birds in snares that have been laid by the shepherds; which they always take, and deposit a penny in the hole for every bird,



as a valuable consideration. This indeed is the settled price, between the shepherds and the nobility and gentry who frequent Brighthelmstone.

#### NATURAL HISTORY of the WHIN CHAT.

**T**HE head and back of this bird are of a pale reddish-brown, regularly spotted with black: it has a narrow white streak over each eye, and beneath that a broad bed of black, which extends from the bill to the hind part of the head: the breast is of a reddish yellow; the belly is whitish, with a reddish tincture, and there are two remarkable white spots on each wing: the lower part of the tail is white, the two middle feathers excepted, which are wholly black; and the upper part of the others are of the same colour. The colours of the female are not so agreeable. Instead of the white and black marks on the cheeks, she has one broad pale brown one, and she has less white in the wings than the male. The bill, feet, and claws of the Whin Chat are black. This is a bird of passage, but it is not certain whether it quits this island.

#### NATURAL HISTORY of the STONE CHATTER.

**T**HIS is also a bird of passage; but it is doubted whether it quits this island: naturalists in general suppose it only shifts its quarters, and does not entirely leave this country. It is a restless noisy bird, and frequently perches upon some bush, chattering incessantly. The head, neck, and throat are black; but the latter has a white bar on each side, and seems, at first sight, to be encircled with white: the feathers on the back are black, edged with tawny; but the sides just above the rump are white: the breast is of a deep reddish yellow, and the belly somewhat lighter: the quill feathers are dusky, edged with a dull red. The head of the female is of an iron colour spotted with black; and the colours in general are less vivid. The legs in both sexes are black.

#### NATURAL HISTORY of the WHITE THROAT.

**T**HIS bird is about the size of a linnæ, but the body is somewhat longer. The upper-part of the bill is blackish, the lower whitish, and the inside of the mouth is yellow. The head is of a brownish ash-colour, and the throat white: the breast and belly of the male are white, tinged with red; those of the female wholly white. The back and coverts of the wings of both are of an iron-colour; the quill feathers and the tail are dusky, edged with reddish brown. The legs are of a yellowish brown.

The White Throat frequents our gardens in summer, and leaves us when winter approaches. It builds near the ground in low bushes; the external part of its nest consists of tender stalks of herbs and dry straw; the middle part of fine bents and soft grass; and the inside of hair. It lays about five eggs, which are of a whitish green colour, sprinkled with black spots.

#### NATURAL HISTORY of the WHITE WATER WAGTAIL.

**A**LL the birds of this kind have a very long tail, which is always in motion; on which account they have obtained the name. The White Water Wagtail weighs about six drams, and is in

length from the tip of the bill to the end of the tail eight inches; but the breadth, when the wings are extended, is eleven inches. The head, back, and neck, as far as the breast, are black: in some the chin is white, and the throat marked with a black crescent. The breast and belly are white; the quill feathers are dusky; and the coverts are black, tipped and edged with white. The tail is very long, and continually in motion. The exterior feather on each side is white, the lower part of the inner web excepted, which is dusky: the others are black. The bill, the inside of the mouth, and the legs are black. The back claw is remarkably long.

The White Water Wagtail frequents the sides of ponds and small streams, feeding on insects and worms like the rest of this genus. This bird shifts its quarters in the winter, directing its course from the north to the south of England, during that season. In spring and autumn this bird is a constant attendant of the plough, in pursuit of the worms thrown up by that instrument. In some places they build their nests under the eaves of houses, and in holes of the walls of buildings, and lay four or five eggs.

#### The YELLOW WATER WAGTAIL.

This bird has a strait sharp-pointed black bill, except at the base of the lower chap, which inclines to a flesh colour. The iris of the eyes is hazel. The top of the head, the upper part of the neck, and the back, are ash-coloured, slightly edged with yellowish green. The male is a bird of great beauty, the breast, belly, and thighs being of a most vivid and beautiful yellow: the throat is marked with some large black spots. It has a bright yellow line above the eye, and another beneath that of a dusky hue, from the bill across the eye; and beneath the eye it has a third of the same colour. The head, the upper part of the neck, and the back, is of an olive green, which brightens in the coverts of the tail. The colours of the female are more obscure than those of the male, and it wants those black spots on the throat. The legs and feet are of a dusky colour, and the claw of the hind toe is pretty long. It makes its nest upon the ground among corn, bents, and stalks of herbs; the inside of which is lined with hair. This bird lays four or five eggs, variegated with dusky spots, and lines irregularly drawn.

#### The GREY WATER WAGTAIL.

It has a slender strait bill, of a dusky colour, and ending in a point. The top of the head, the upper part of the neck, and the back, are ash-coloured: the space round each eye is ash-coloured; beneath and above which is a line of white. In the male the chin and throat are black; the feathers incumbent on the tail are yellow; and the tail is longer in proportion to its size than that of any other kind. The breast, and the whole under side of the body are yellow: the quill feathers are dusky, those next the back being edged with yellow. In the female, the black spot on the throat is wanting, and the colours in general are more obscure than in the male. The legs, feet, and claws of this bird are of a dusky colour: it frequents stony rivers, and feeds upon insects.

#### The JAMAICA WATER WAGTAIL.

It has a small head, and a strait black bill, with a bluish cast towards the base: the head, and lower part of the neck is black, but the upper part is yellow. The whole of the back, breast, and lower part of the belly are also yellow. The wings are black, with a white spot in the middle; the tail also is black, and the feet are brown. The tail of this bird is about four inches long, which, together with the colour of the feathers, occasioned Mr. Ray to place it among



among the Wagtails; but Marcgrave says it neither feeds nor wags its tail like the birds of this kind beforementioned.

#### NATURAL HISTORY of the GROSSBEAK.

**T**HIS bird is also called a hawfinch; it is seven inches in length, and thirteen in breadth, and weighs almost two ounces: the bill is in shape like a funnel, strong, thick, and of a dull pale pink colour; at the base of which are some orange-coloured feathers; the irides are grey; and the cheeks, and the crown of the head are of a fine deep bay: a black line extends from the bill to the eyes; the breast and belly are of a dirty flesh-colour. The neck is ash-coloured, and the back and coverts of the wings of a deep brown; those of the tail being of a yellowish bay: the great quill feathers are black, spotted with white on their inner webs. The tail is short, having white spots on the inner sides, and the legs are of a flesh-colour. The great peculiarity of this bird, is the form of the ends of the middle quill feathers; which resembles, as Mr. Edwards properly observes, the figure of some of the ancient battle-axes. These feathers are glossed over with a rich blue; but are less conspicuous in the female; her head being of a dull olive colour, tinged with brown.

The Grosbeak is not regularly migrant, visiting us only in hard winters: they feed on berries, and even on the kernels of the strongest stones, such as those of cherries and almonds, which they crack with the utmost ease; their bills, from their strength and thickness, being well adapted to that work. We are told by Mr. Willoughby, that these birds are common in Italy and Germany, where they live in the woods in summer, and breed in hollow trees, laying five or six eggs; but that they come down into the plains in winter. Their legs and feet are of a pale flesh-colour, and the claws are pretty strong and large.

#### The GAMBIA GROSSBEAK.

This bird is about the size of the hawfinch: the bill is large, and broad at the base, ending in a sharp point, and resembling the figure of a cone. The mouth, which is large, is of an ash-colour in the inside. The pupils of the eyes are black, surrounded with a white iris; the head, and the greatest part of the neck are black, ending in a circular black point on the fore part of the breast. The rest of the body, and the wings and tail, are of a beautiful yellow, shaded with a bright green. The legs and feet are of an ash-colour, with a bluish gloss. These birds abound on the coast of Guinea, in Africa, near the river Gambia.

#### The PURPLE GROSSBEAK.

This is about the size of a sparrow: it has streaks of red over the eyes, on the throat, and near the vent under the tail: all the rest of the body is of a deep purple. The hen has the same red streaks, but the body is brown. This is a native of the Bahama Islands.

#### NATURAL HISTORY of the CROSS-BILL.

**T**HE Cross-Bill is an inconstant visitant of this island. Gesner informs us, that in Germany and Switzerland, it inhabits the pine-forests, and breeds in the pine-trees so early as the months of January and February. These birds feed on the seeds of the cones of pines and firs, and are very dextrous in scaling them; for which purpose the cross structure of the lower mandible of their bill is admirably adapted. They also feed on hemp-seed, and the

kernels of apples, and are said to divide an apple with one stroke of the bill, to get at the contents: it is certain that these birds change their colours, or rather the shades of their colours: the males which are red, varying at certain seasons to deep red, to orange, or to a kind of a yellow. The females, which are green, alter to different varieties of the same colour. There are two varieties of this bird, one being considerably smaller than the other: the lesser kind are the most common.

#### NATURAL HISTORY of the BULL-FINCH.

**B**ULL-FINCHES are so called from their heads, which are black, and, in proportion to their bodies, large. In some parts of England they are called popes, in others thick-bills, and in others hoops. They are very docile birds, the hen learning after the pipe or whistle as well as the cock; but its own wild note is not in the least musical. They excel most birds, however, in what is taught them, and they are remarkable for not forgetting what they have once learned, though they should be placed among several other singing-birds, in the same room. Some have been taught to speak several words at command, with great propriety of articulation. They are deservedly esteemed, both for their song, and the beauty of their figure. In the latter they equal any male birds; and in the former, if properly instructed, they excel them. A gentleman in Lancashire had one that could whistle several tunes; and was so well disciplined, that it would obey its master's call, and perch on his shoulders; and, when commanded, go through a difficult musical lesson. Many which are taught to speak, are annually brought from Frankfort on the Maine to London, in order to be sold to the best advantage.

The male is distinguished from the female, by the superior blackness of its crown, and by the rich crimson that adorns the cheeks, breast, belly, and throat; those of the female being of a dirty buff colour: the bill is short, black, and strong; the eyes are of a hazel colour, and the head (as already observed) is large in proportion to the size of the body. Part of the neck, shoulders, and back, are of a bluish ash-colour, shaded with red, and the belly and rump are white. Some of the quill feathers have their outward webs red, and the inner of a fine glossy black: others are black, with dusky edges, and of a bluish gloss; and others have their outward edges white, forming a sort of white line, or cross-bar upon each wing. The tail is of a shining black, and about two inches long; the legs are of a dusky colour, and the claws are black.

Among young Bull-Finches it is difficult to discover the cock from the hen: the most certain method to come at a discovery, is to pull off a few feathers from their breasts when they are about three weeks old, and in about ten or twelve days after, fresh feathers will appear where you have pulled off the others: if they are of a curious red, it is a cock; but if they are of a palish brown, it is a hen.

In the spring these birds frequent our gardens, and feed upon the tender buds of fruit-trees, such as the apple, pear, peach, and other garden-trees. They breed about the latter end of May, or the beginning of June, at which time they are seldom seen near the houses; always choosing some retired place to breed in. Their nests, which are usually built in forests, woods, or parks, are very difficult to be found; and, when they are seen, they are of so wretched a fabric, that they would not be taken for nests, except by those who are connoisseurs in the nestling of birds. They are composed of a few small sticks placed across each other in a very slovenly manner, and lined with a few fibrous roots. The female lays four



four or five eggs of a bluish colour, spotted at the largest end with large dark brown and faint reddish spots.

Young Bull-Finches should not be taken till they are pretty well feathered; that is, when they are twelve or fourteen days old. They should be kept warm and clean, and fed every two hours from morning till night; but they must have but little at a time. Their food should be rape-feed, soaked in water eight or ten hours, and then scalded and bruised: this should be mixed with an equal quantity of white bread soaked in water, strained, and afterwards boiled thick with milk. It should be fresh every day; for if it is sour, it will do the birds an injury.

The Bull-Finch is about the size of the common sparrow. It is so pernicious to fruit-trees, by destroying their tender buds, that in some parts of England a reward is given by the church-wardens for every one that is killed. This may be assigned as one reason of their scarcity; for they are certainly less common than most other singing-birds that breed among us.

#### NATURAL HISTORY of the SPARROW.

**T**HIS is usually called the house-sparrow. It has a very thick strong bill, about half an inch in length, and the eyes are of a hazel-colour. The crown of the head is grey, and under each eye is a black spot; and above the corner of each is a broad bright bay mark, which surrounds the hind part of the head. The cheeks are white, the chin and under side of the neck are black, the latter being edged with white; and the belly is of a dirty white: the back is spotted with red and black, and the tail is dusky. The lower mandible of the bill of the female is white. But this bird is so universally known, that it would be impertinent to give any farther description. It is six inches and an half in length, from the tip of the bill to the end of the tail, and weighs somewhat more than an ounce. It feeds upon grain, and does considerable mischief in the corn-fields.

Sparrows, which are very numerous in this country, are proverbially salacious, and consequently very short-lived birds. They breed early in the spring, making their nests under the eaves of houses, in thatches, in holes of walls, and frequently in the nests of the martin, after expelling the owner. Linnaeus tells us (upon the authority of Albertus Magnus) that the martin does not suffer this insult to pass unrevenge; the injured bird assembles its companions, who assist him in plastering up the entrance with dirt; after which they fly away twittering in triumph, leaving the intruder to perish in his muddy prison.

#### THE BLACK SPARROW.

This is about the size of a lark, and has a thick short beak. The iris of the eyes are red. The head, neck, breast, back, and tail are black, but the wing-feathers are edged with white. The breast and belly are white in the middle, on the sides, and lower parts; the upper part of the wings are of a dark red, and the legs are brown.

#### THE AMERICAN SPARROW.

The back of this bird is of a curious black, the belly white, the head and breast of a fine blue, and the wings and tail of a shining black, with a purple cast. The rump is of a deep green. One of these was sent here from the island of Barbadoes.

#### THE GOOD-HOPE SPARROW.

This is a native of the Cape of Good-Hope, and has a bill of a palish brown, which is not so strong

as in other birds of this kind: the iris of the eyes is of a pale yellowish white, and the upper-part of the body, the head, and neck are black; which colour terminates in a point upon the belly; the lower-part of which, as well as the thighs, and the fore-part of the wings being white. The sides of the wings are of a light brown, and some of the quill feathers are black. The colour of the tail is the same as that of the wings, and the legs and feet are of a dusky brown.

There is also a bird called the White Lapland Sparrow of Linnaeus, which is of the size of a lark, and generally weighs about an ounce. Its bill is sharp, conical, and black, though of an ash-colour towards the base; but it is principally remarkable for having teeth on each side of the palate, at the orifice of the throat.

The Chinese Sparrow is less than the house-sparrow, but has no remarkable distinction.

The Little Bahama Sparrow is of the size of a Canary-bird, and the head, neck, and breast are black; all the other parts being of a dirty green.

The Mountain Sparrow is of the size of the common Sparrow, but somewhat longer. It is found in mountainous woody places, but is rather an uncommon bird.

The Wood Sparrow is of a rusty iron-colour on the crown of the head, and has a white space about the eyes. It has also blackish transverse lines running along the chin, and the lower part of the neck.

#### NATURAL HISTORY of the GREEN-FINCH.

**T**HE Green-finch is somewhat larger than the common sparrow: the head and back are of a yellowish green. The upper chap of the bill is of a dusky colour, and the lower whitish. The rump is of a fine yellow, but the breast is paler, and shaded with green: the belly is white. The edges of the outmost quill feathers are yellow, the next green, and the farthest grey. The tail is about two inches long, and a little forked: the two middle feathers are dusky; and the exterior webs of the four outmost feathers on both sides the tail are yellow. The colours of the female are much less vivid than in the male.

These birds are very common in this country. They have young ones about the middle of May: they make their nests in hedges, which are very large considering the size of the inhabitants; the outside of which consists of hay, stubble, and grass; the middle part of moss, and the inside of feathers, wool, and hair. The female lays five or six eggs, of a pale green colour, sprinkled with small reddish spots, which are more numerous at the large end. The Green-finch, from the end of the bill to the extremity of the tail, is about six inches and an half, the bill is half an inch in length, and the weight of the bird is sixteen drams.

Though Green-finches are frequently kept in cages, they are not much esteemed for their singing: yet some of them, if brought up from the nest, will learn to pipe and whistle, and to imitate the song of most other birds. They are valued by some for their facility in learning to ring the bells in a cage contrived for that purpose. At the beginning of winter, and in hard weather, they assemble in flocks, and may be caught with the clap-nets in great numbers. The young are fit to be taken at ten days old. The Green-finch is very easily tamed.

#### NATURAL HISTORY of the GOLD-FINCH.

**T**HE Gold-finch is a little less than the house-sparrow, weighing about half an ounce; and its length, from the tip of the bill to the end of the



tail, is five inches and an half the breadth; when the wings are extended, is nine inches. It is one of the most beautiful of the hard-billed small birds; whether we consider its colours, the elegance of its form, or the music of its note. The bill is white, tipped with black; the base being surrounded with a ring of rich scarlet feathers: a black line extends from the corners of the mouth to the eyes: the cheeks are white, and from the top of the head a broad black line passes on each side almost to the neck. The hind part of the head is white: the back, rump, and breast are of a fine pale tawny brown, rather lighter on the two latter. The belly is white, and the wings and tail black, but the points of the chief feathers are white in both: a beautiful yellow stripe runs across the wings. The tail is about two inches long, and of a black colour; but often the feathers are marked with a white spot near their ends. The legs are white.

The cock is distinguished from the hen by the feathers on the ridges of the wings, which are of a deep black, and those of the hen are of a dusky brown: the black and yellow in the wings of the female are also less brilliant than in those of the male. The young bird, before it moults, is grey on the head, and is therefore termed a grey-pate by the bird-catchers.

The Gold-finch begins to build in April, when the fruit-trees are in blossom. As they excel the other small birds in beauty of feathers, so do they likewise in ingenuity: their nest is small, but extremely beautiful: the outside consists of very fine moss, curiously interwoven with other materials, and the inside is lined with fine down, which has the appearance of cotton. The Gold-finch lays five or six white eggs, marked with deep purple spots on the upper end. This bird is fond of orchards, and frequently builds its nest in an apple or pear-tree.

Gold-finches are of a mild and gentle nature, and almost as soon as they are taken are easily prevailed on to eat and drink; nor are they so much affrighted at the presence of man as birds are in general. They are also soon reconciled to their imprisonment in a cage; and after they have remained there a considerable time, they become so fond of it, that if the door of the cage is opened they will not fly away, but usually fly to the cage for shelter if any thing should terrify them.

In some parts of England they are called draw-waters, from their facility in learning to draw their water when they are inclined to drink; for which purpose they are sometimes furnished with a little ivory bucket, fastened to a small chain. It is entertaining to see with what dexterity these little creatures pull up their bucket, drink, and return it. They are much delighted with viewing themselves in a looking-glass, which is sometimes fixed to the back of their bucket-board. They will sit upon their perch, pruning and dressing themselves with the greatest care imaginable, looking incessantly in the glass, to see that every feather is placed in the nicest order.

The Gold-finch is a long-lived bird, and sometimes reaches the age of twenty years: Mr. Willoughby mentions one that lived twenty-three years. Towards winter these birds assemble in flocks, and feed on seeds of different kinds, particularly those of the thistle. Their note is very sweet, and they are much esteemed on that account, as well as for their beauty, and their great docility.

The young are tender, and therefore should not be taken out of their nests till they are pretty well feathered. If a young Gold-finch is brought up under a Canary-bird, a wood-lark, or any other singing-bird, he will readily take their song. A cock Gold-finch, bred from the nest, will couple with a

hen Canary-bird, and their eggs will produce birds between both kinds; partaking of the song and colours of both; but the young will be barren.

There is an American bird called the American Gold-finch, by Catesby: it is black on the forehead, and about the eyes; the wings are of an earthy colour, edged with straw colour, and fringed. The tail is black, with a yellowish cast, and the other parts are yellow.

#### NATURAL HISTORY of the CHAFFINCH.

THE Chaffinch is a hardy well known bird, and about the size of the bull-finch. It entertains us agreeably with its song very early in the year; but, towards the latter end of summer, assumes a chirping note. Its nest is almost as elegantly constructed as that of the gold-finch, and nearly of the same materials, except that the inside is lined with feathers and hair instead of down. It lays four or five eggs of a whitish colour, tinged and spotted with deep purple.

This bird is lavish in its song, and when brought up from the nest, will sing six or seven months in the year; but in its wild state, not above three months.

It has a strong bill of a pale blue colour, and black at the tip, as well as at the upper part: the crown of the head, the hind part and the sides of the neck are of a bluish grey; the breast is red; the sides and belly are white, tinged with red; the upper-part of the back is of a deep tawny colour; the lower part, and rump, are green. The colours are much stronger, and more lively in the male than in the female; and some of the quill feathers have white webs, with green edges, shaded with yellow: the small feathers on the ridges of the wings are blue, spotted with white. The tail is black, except the outmost feather, which is marked obliquely with a white line from top to bottom; and the next, which has a white spot on the end of the inner web. The legs are dusky. The female wants the red on the breast and other parts; the head and upper part of her body are of a dirty green; and the belly and breast of a dirty white.

The young of the Chaffinch may be taken at about ten days old; for as they are hardy birds they are easily brought up. Some bird-catchers, not satisfied with depriving the little innocent creatures of their liberty, exercise the cruelty of putting out the eyes of the Chaffinch, because they say he is then more attentive, and learns more expeditiously: this wicked experiment is done with a wire made almost red hot. It is however affirmed, that this cruel operation answers no other purpose than that of rendering the operator detestable, for rewarding the bird's endeavours to please him, with temporary torture, and perpetual blindness.

It is very singular that in Sweden, the female Chaffinches quit that country in September, migrating in flocks into Holland; and leaving their mates behind.

#### NATURAL HISTORY of the BRAMBLING.

THIS is a common bird in this country, but is chiefly found in the woody parts: it is larger than the chaffinch; the top of the head is of a glossy black, edged with a yellowish brown; the feathers on the back are of the same colour, but the edges are more deeply bordered with brown; the chin, throat, and breast, are of an orange-colour: the lesser coverts of the wings are of the same colour; but those on the quill feathers are barred with black, and tipped with orange. The tail is a little forked, and the exterior web of the outer feather white: the others



others are black, except the two middle ones, which are edged and tipped with ash-colour.

#### NATURAL HISTORY of the SISKIN.

**T**HE head of this bird is black, and the upper-part of the body green, except that the shafts of the feathers on the back are blackish. The rump is of a yellowish green, but the throat and breast are paler. The belly is white, and the feathers under the tail are yellowish, with oblong brown spots: the wings are marked with a transverse spot of a yellowish colour. The two middle feathers of the tail are black; the rest above half-way are of a most beautiful yellow with black tips. The colours of the female are paler; her throat and sides are white spotted with brown; and her head and back are of a greenish ash colour, marked also with brown.

We are told by Mr. Willoughby, that this is a song bird, and that in Sussex it is called the barley-bird, because it visits them in the barley-feed time. The Siskin does not breed in these islands, but comes hither in autumn and departs in the spring. It feeds in the same manner as gold-finches and linnets, and is frequently seen upon elder trees. It is to be met with in the bird shops in London, and being rather a scarce bird, sells at a higher price than the merit of its song deserves.

#### NATURAL HISTORY of the LINNET.

**T**HE length of this bird, including bill and tail, is five inches and an half; of which the former is half an inch, and the latter two inches and a quarter. It weighs about ten drams. The bill is dusky, but in spring it assumes a bluish cast: it is thick, strong, and about half an inch in length: the head is variegated, with ash-colour and black, and the back is of a blackish red; the bottom of the breast is of a fine red, and the lower part of the belly yellowish. The lower part of the throat is of a beautiful red, and the edges of its feathers of a yellowish red: the tail is a little forked, and of a brown colour, edged with white, the two middle feathers excepted, which are bordered with a dullish red. These birds are much esteemed for their song; they feed on seeds of different kinds, which they peel before they eat: the seed of the linum, or flax, is their favourite; from whence arose the name of the linnet tribe.

They usually build in a thick bush or hedge, particularly among white thorn or furze. The outside of their nests is composed of moss, bents, and dry weeds; the inside of fine soft wool or cotton, mixed with a kind of down, gathered from dried plants, and a few horse hairs. They lay four or five whitish eggs, spotted like those of the gold-finch. The young ones are hatched about the latter end of April, or the beginning of May, which may be taken when they are about ten days old. They must be kept very warm, and fed every two hours, from six in the morning till six or seven in the evening.

The cock may be known from the hen by the feathers on his back, which are much browner than those of the hen; and by the white of his wing; to examine which, when the wing feathers are grown, one of the wings must be stretched out, while the body of the bird is held fast with the other hand; and then the white must be observed upon three or four feathers: if it appears bright and clear, and extends to the wings, it is a certain sign of its being a cock; the white in the wing of the hen being much less and fainter.

The Linnet may be taught to pipe or whistle, and

is easily instructed in the song of any other fine bird; but as its own note is so very fine, that trouble is unnecessary: the natural note of any fine singing-bird, being always to be preferred.

Linnets may be taken with clap-nets in the months of June, July, and August; but flight-birds are the most plentiful about the beginning of October. The nets should be placed near the spot where they are accustomed to eat or drink.

#### The GREATER RED-HEADED LINNET, or REDPOLE.

This bird is smaller than the former, and has a bill like that of a chaffinch: the head is ash-colour, except that it has a blood-coloured spot on the forehead. The breast is tinged with a fine rose-colour. The neck is of an ash-colour: the back, scapular feathers, and coverts of the wings are of a bright reddish brown; the sides are yellow, and the middle of the belly white. The tail, like that of the former, is forked, and of a dusky colour, edged on both sides with white. The head of the female is ash-colour, spotted with black: the back and scapulars are of a dull brownish red; and the breast and sides of a dirty yellow, streaked with dusky lines.

This is a familiar bird, and is as cheerful five minutes after it is caught, as a French prisoner is said to be after the same short captivity. It has a pretty chattering kind of song, and is often kept in cages. It should be fed with the same sort of seeds as the common linnet or chaffinch. These birds are frequent on our sea-coasts, and, in flight time, are often taken near London.

#### The LESSER RED-HEADED LINNET.

This is the least of the Linnets, not exceeding half the size of the preceding. These are also distinguished from the last species by the bill being smaller and sharper; by both sexes having the spot on the head; by the legs and feet being dusky; and by their assembling in flocks, which the others do not. Mr. Pennant mentions his having seen the nest of this species on an alder stump near a brook, between two and three feet from the ground. The outside consisted of dried stalks of grass and other plants, mixed with a small quantity of wool; and the lining was composed of hair and feathers: the bird was sitting on four eggs of a pale bluish green, thickly sprinkled near the blunt end with small reddish spots. The bird, continues he, was so tenacious of her nest, as to suffer us to take her off with our hand, and we found, that, after we had released her, she would not forsake it.

#### The TWITE, or MOUNTAIN LINNET.

This is rather inferior in size to the common Linnet, and is therefore called by Brisson *La petite linotte*, or little Linnet. In shape and colour, however, it does not materially differ from the common Linnet. Its bill is short and yellow, and above and below each eye there is a pale brown spot. The male has a curious red spot on the rump, which the female has not. This bird takes its name from its note, which has very little music in it: it is a familiar bird, and more easily tamed than the common Linnet. This bird is taken in the flight season near London, with the Linnets, and is there called a Twite. It does not breed in England, but comes there in the winter: it will feed on rape and Canary-feed, but gives the preference to the latter. It is common in some parts of France, where it lays eggs resembling those of a Linnet, but smaller.

#### NATURAL HISTORY of the BUNTING.

**T**HIS bird is larger than the common lark, but not very different in colour. It weighs an ounce and an half, and is about seven inches and an half,



half, from the tip of the bill to the end of the claws. The bill of this bird, and the other species of this genus, is singularly constructed; the sides of the upper chap form a sharp angle, bending inwards towards the lower; and in the roof of the former is a hard knob, fitted for bruising corn or other hard feeds. This bird is somewhat more of a brick colour than the lark, and its chin, breast, and belly, are of a yellowish white. The throat is marked with oblong black spots, and the tail is about three inches long, and of a dusky red. The legs and claws are of a dusky colour.

#### NATURAL HISTORY of the YELLOW-HAMMER.

**T**HE Yellow-hammer is about the size of a chaffinch, or rather larger. It is six inches and an half in length, from the tip of the bill to the end of the tail, and weighs about ten drams. The bill is of a dusky hue, and the crown of the head of a pale yellow; spotted with brown in some, and plain in others: the hind part of the neck is tinged with green; the chin and throat are yellow; and the breast is marked with an orange red: the belly is yellow, and the lesser coverts of the wings are green; the others are dusky, edged with rust colour: and the back is of the same colours. The quill feathers of the wings are dusky, some of which are edged with green, and others with a dirty white. The tail, which is about three inches long, is a little forked at the end; the edges of some of the feathers being green, and some marked with white spots near the tips. The feet are of a light brown, and the claws are black.

It makes a flat nest on the ground on the sides of banks or hedges, and generally under a bush; but sometimes near a river or brook. Its nest is composed of moss, dried roots of grafs, weeds, and horse-hair intermixed. It lays six or seven white eggs, veined with a dark purple. The young ones are usually fit to be taken by the beginning of May, but they should remain in the nest till they are ten or twelve days old. This is a very common species, and in the winter frequents farm yards with other small birds.

The male, in a wild state, sings very prettily; and though it is seldom kept in a cage, yet makes no contemptible figure there; for, exclusive of its song, his fine feathers are some recommendation.

The female is of a duller colour all over the body than the male, and those parts which are of a fine yellow in the latter, are of a dirty green in the former.

#### NATURAL HISTORY of the REED SPARROW.

**T**HIS bird is about the size of a chaffinch; the length is six inches and an half, and the breadth ten inches: it has a short black bill, the edges of which are turned a little inwards; so that the tongue lies buried in a small hollow like a funnel. The head, chin, and throat of the male are black; and at each corner of the mouth a white ring commences, which encircles the head. The back, covert feathers of the wings, and the scapular feathers, are black, deeply bordered with red. The belly is white; the two middle feathers of the tail are black, bordered with red, and the three next are wholly black. The exterior web, and part of the interior of the outermost feather is white. The head of the female is rust colour, spotted with black, and she wants the white ring round the neck.

This bird frequents the sides of rivers and marshy places, and delights in being among reeds, from

whence it takes its name. The situation of its nest is remarkably contrived: it is fastened to four reeds, and suspended like a hammock about three feet above the water; the materials of which the nest consists are decayed rushes, fine bents, and hairs. The Reed Sparrow lays four eggs of a pale blue, marked with irregular purplish veins, especially on the larger end. It is much admired for its song, and, like the nightingale, sings in the night. These birds are not, however, very common in cages, but when we are walking in summer by the sides of a river, they present us with an agreeable harmony.

#### NATURAL HISTORY of the GREAT TIT-MOUSE.

**T**HIS bird is also called the ox-eye: it is six inches in length, nine inches in breadth, and weighs about an ounce. The bill is strait, black, and half an inch in length: the tongue is broad, ending in four filaments; the head and throat are black; the cheeks white; the back and coverts of the wings green. The belly is of a yellowish green, divided in the center, by a line of black, extending to the vent: the rump is of a bluish grey; and the quill feathers are dusky, tipped with blue and white. The lesser coverts are blue, and the greater are tipped with white. The tail is about two inches and an half long, and of a black colour, except on the outward edges, which are blue.

Though our gardens are sometimes visited by this bird, it chiefly inhabits woods; where it makes its nest in hollow trees, and lays nine or ten eggs. This, and the whole tribe of Tit-Mice, feed on insects which they find in the bark of trees; but, in the spring, they do considerable mischief in fruit gardens, by destroying the tender buds. Like wood-peckers, they are perpetually running up and down the trunks of trees in pursuit of food.

#### The BLUE TIT-MOUSE.

This is a very beautiful bird, but, like the preceding, does great injury to fruit-trees: it breeds in holes of walls, and lays about twelve or fourteen eggs. It has a short dusky bill, and the crown of the head is of a fine blue colour: the forehead and cheeks are white; and a black line extends from the bill to the eyes. The back is of a yellowish green, and the lower side of the body yellow: the wings are blue, marked transversely with a white bar; the tail is blue, and the legs are of a lead colour.

#### The COLE-MOUSE, or BLACK TIT-MOUSE.

The length of this bird is five inches, and the breadth seven. It is distinguished from all other Tit-Mice by its smallness. It has a black head with a white spot on the hind part; the back is of a greenish ash colour, and the rump is of a deeper green. The outer edges of the prime wing feathers are also green.

#### The LONG-TAILED TIT-MOUSE.

This bird is five inches and a quarter in length, and seven inches in breadth. The bill is black, short, thick, and very convex, differing from all the rest of the Tit-Mouse kind; the base is beset with small bristles, and the irides are of a hazel colour. The top of the head is white, surrounded with a broad stroke of black, which rises on each side of the upper chap, passes over each eye, and unites at the hind part of the head; continuing along the middle of the back to the rump. On each side of this black stroke, the feathers are of a purplish red, as well as those immediately incumbent on the tail. The covert feathers of the wings are black; the secondary and quill feathers are dusky. The tail is three



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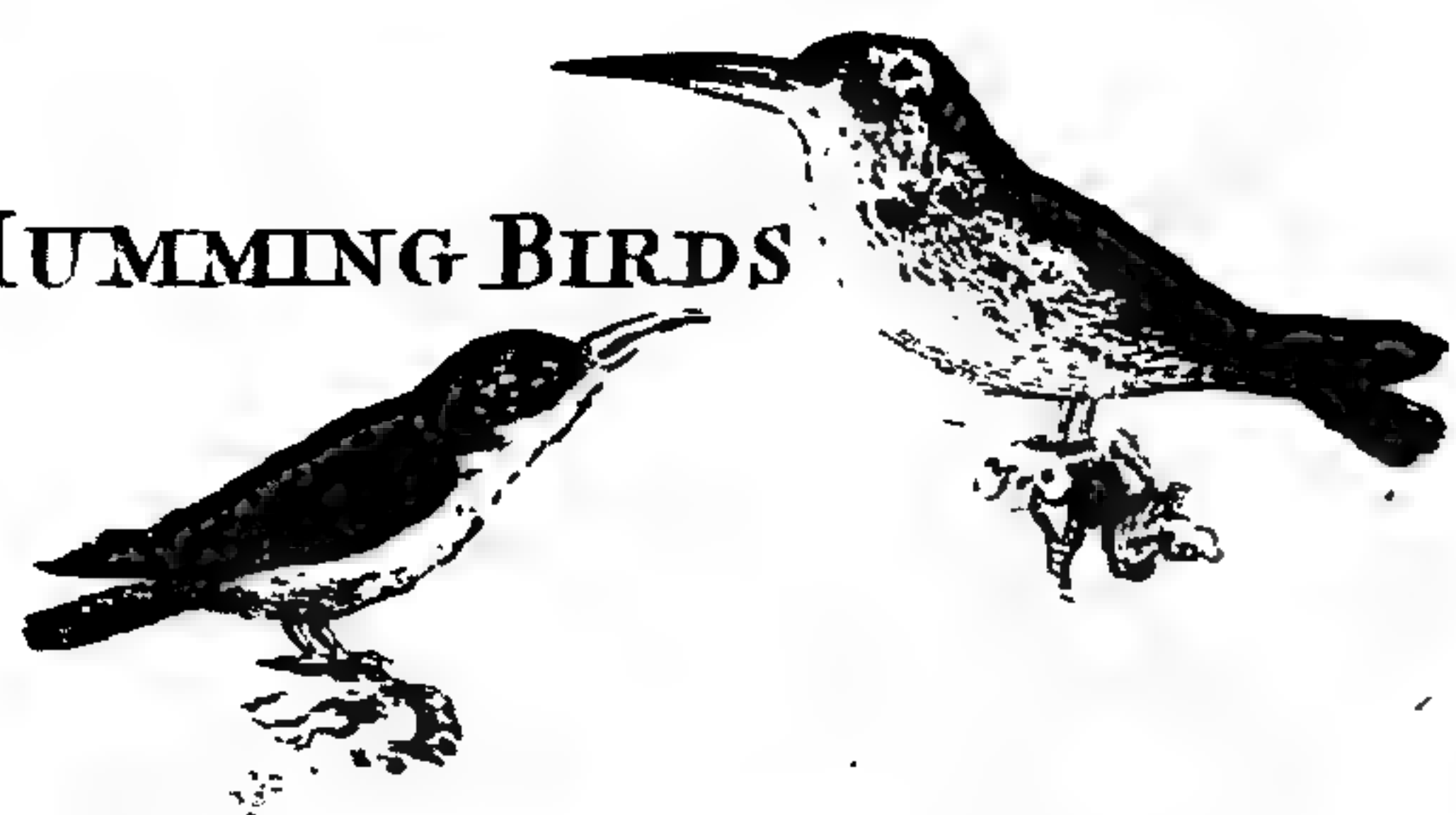
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# BIRDS.

HUMMING BIRDS



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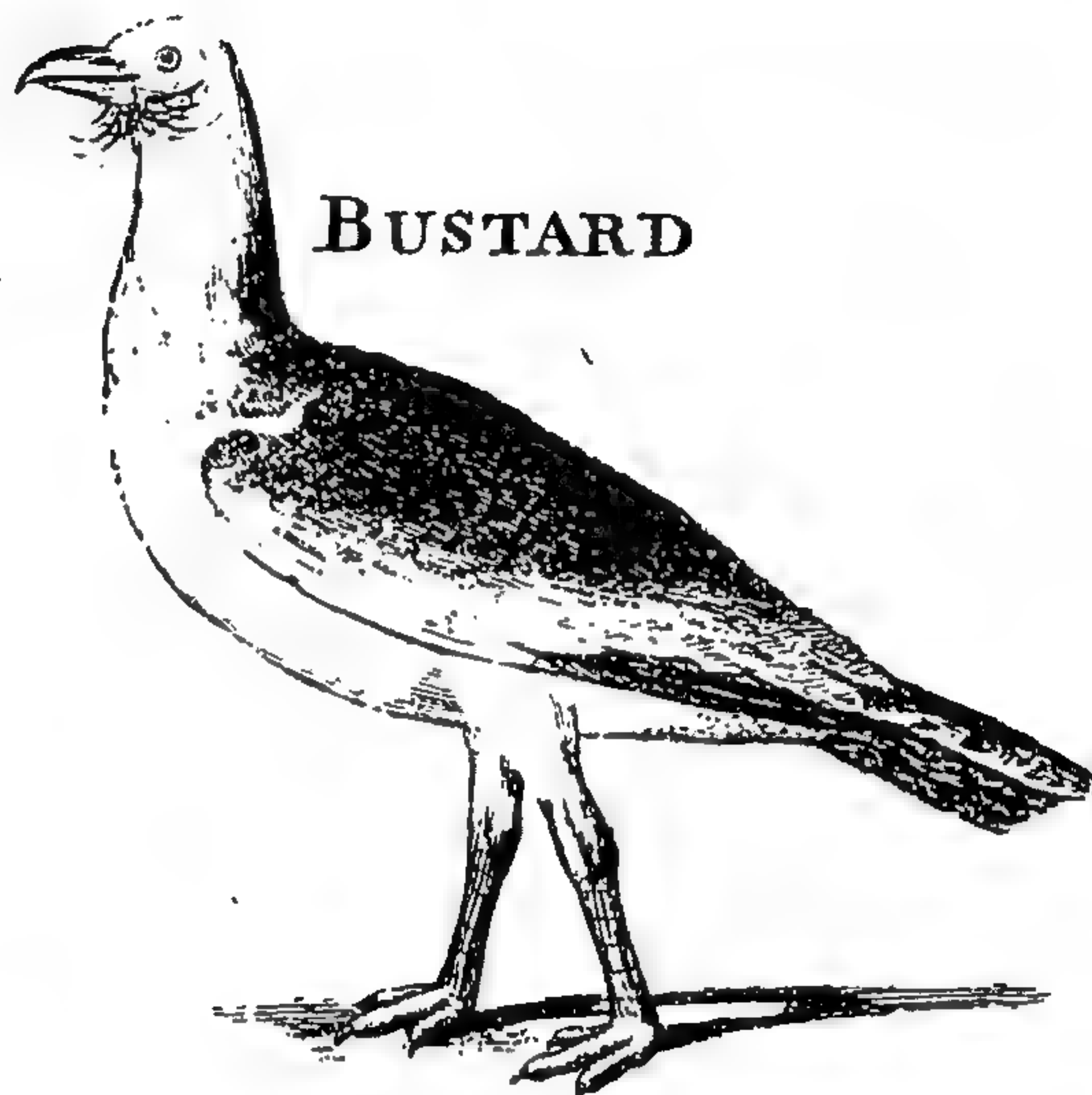
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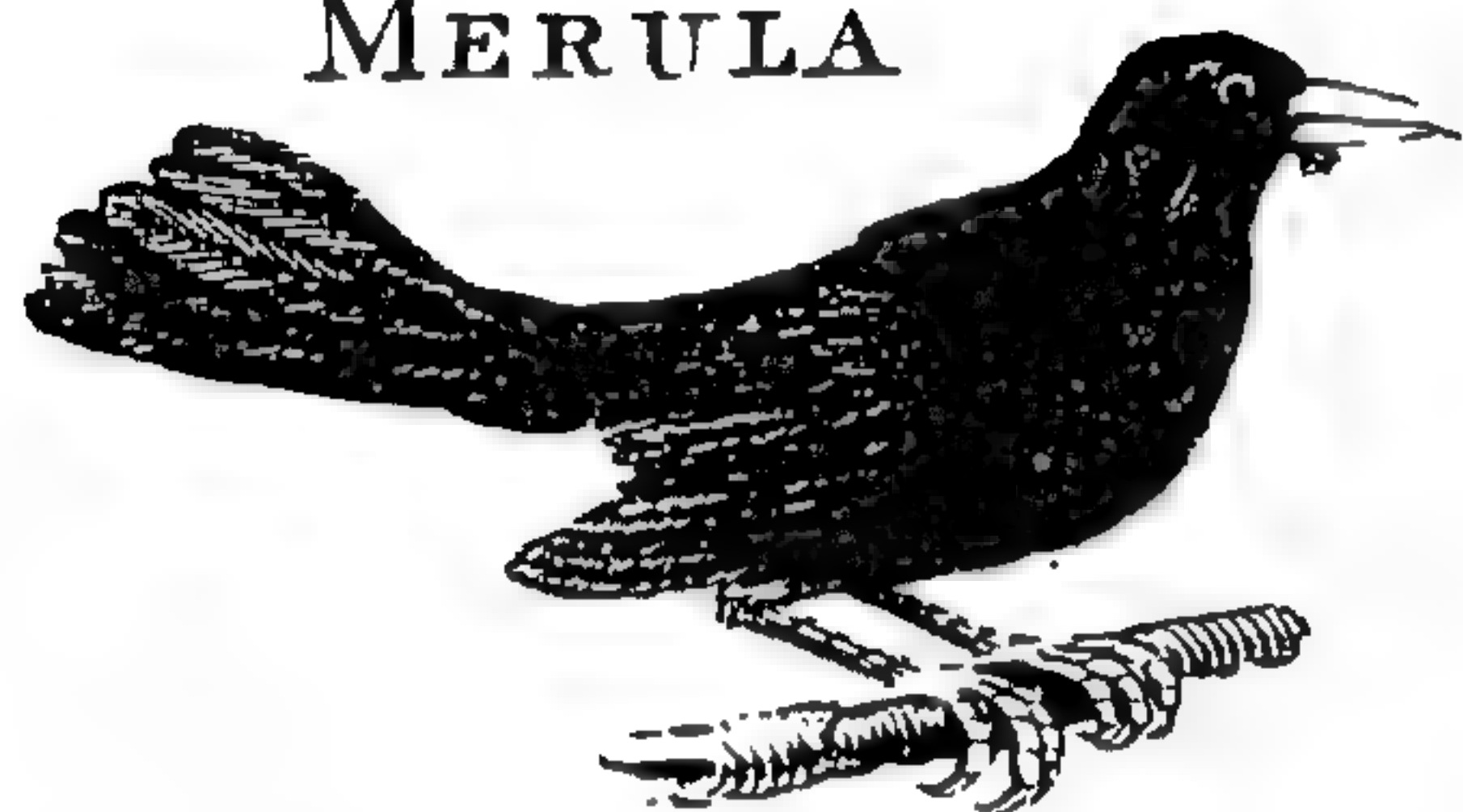
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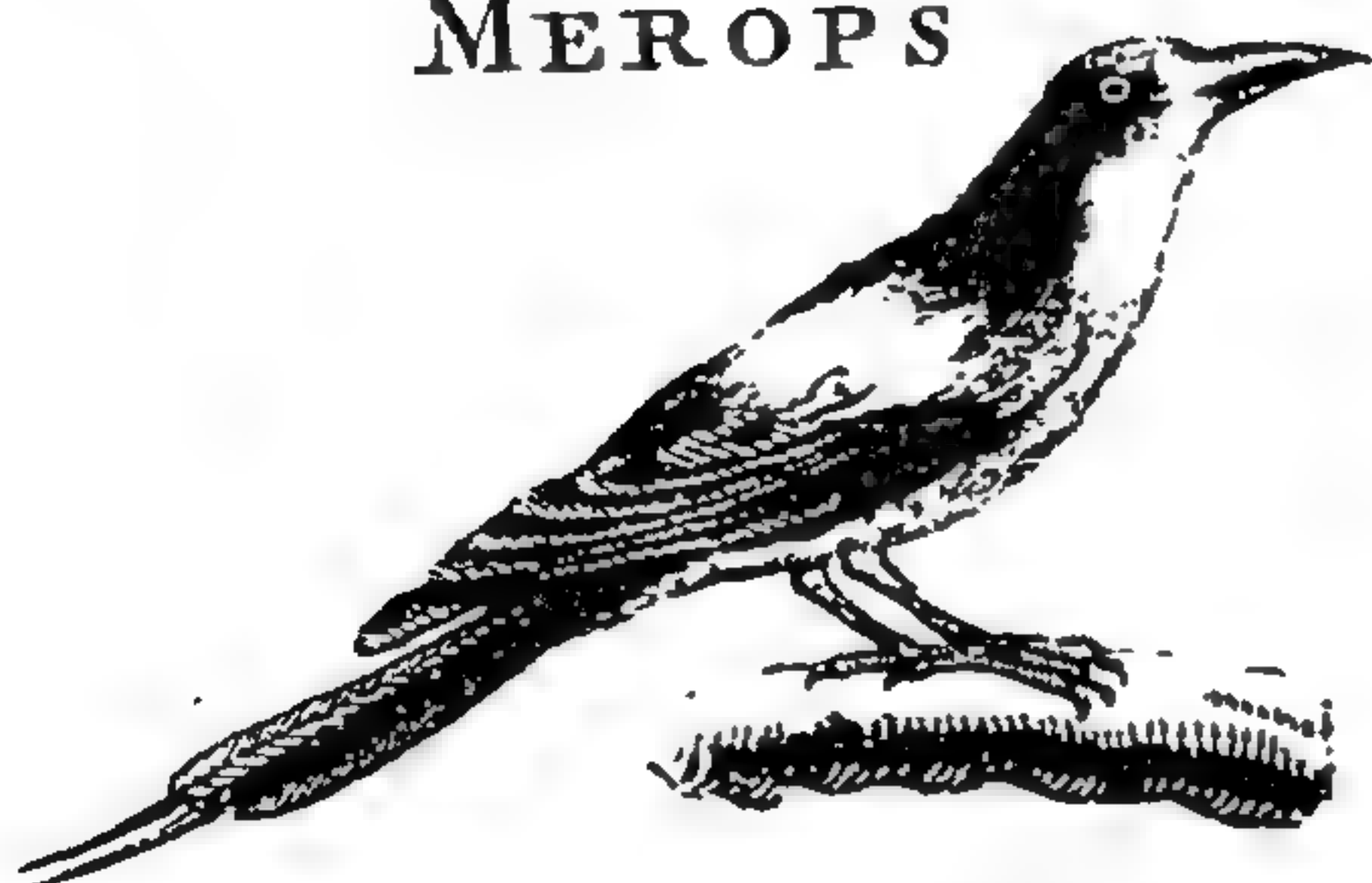
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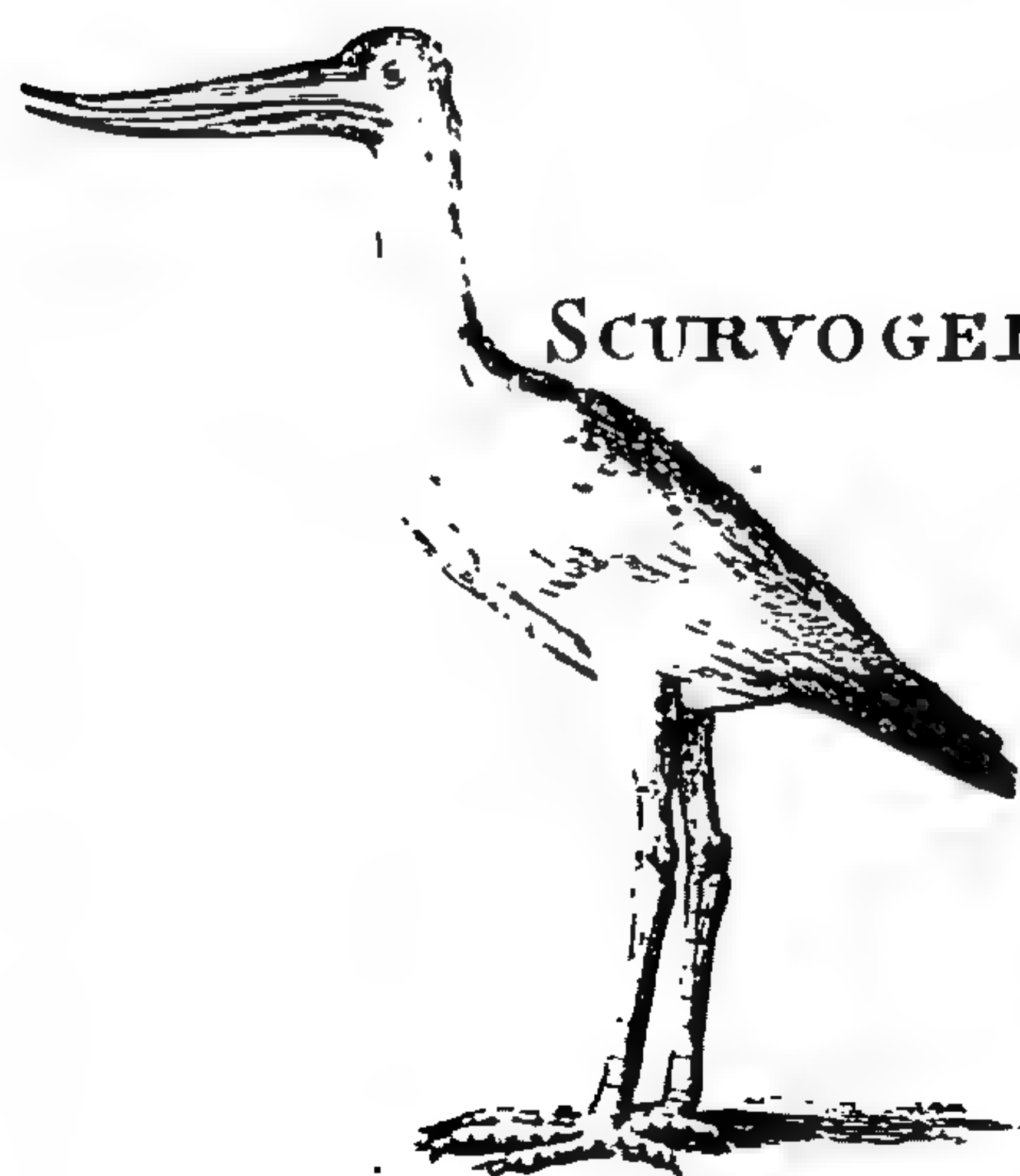
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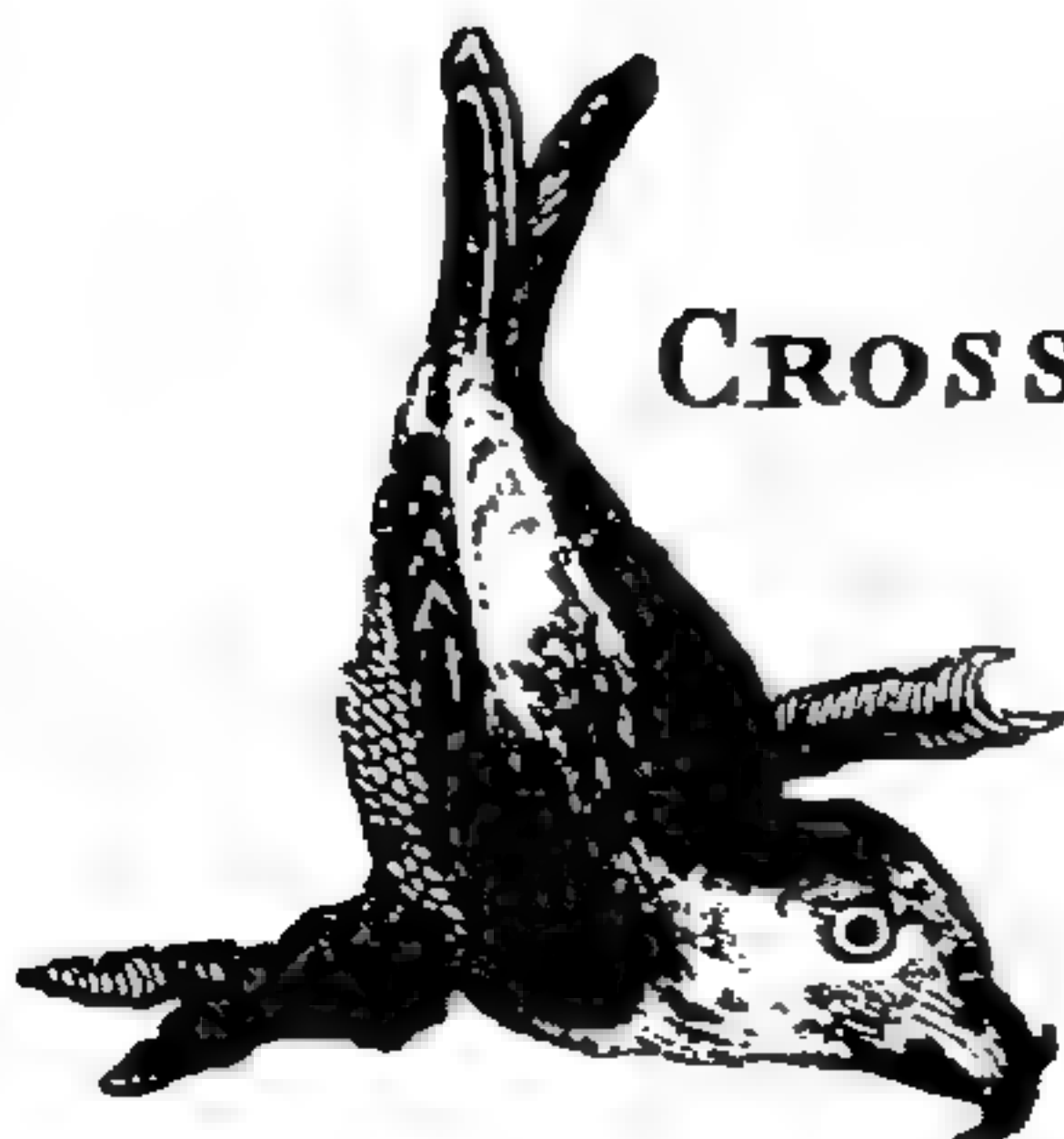
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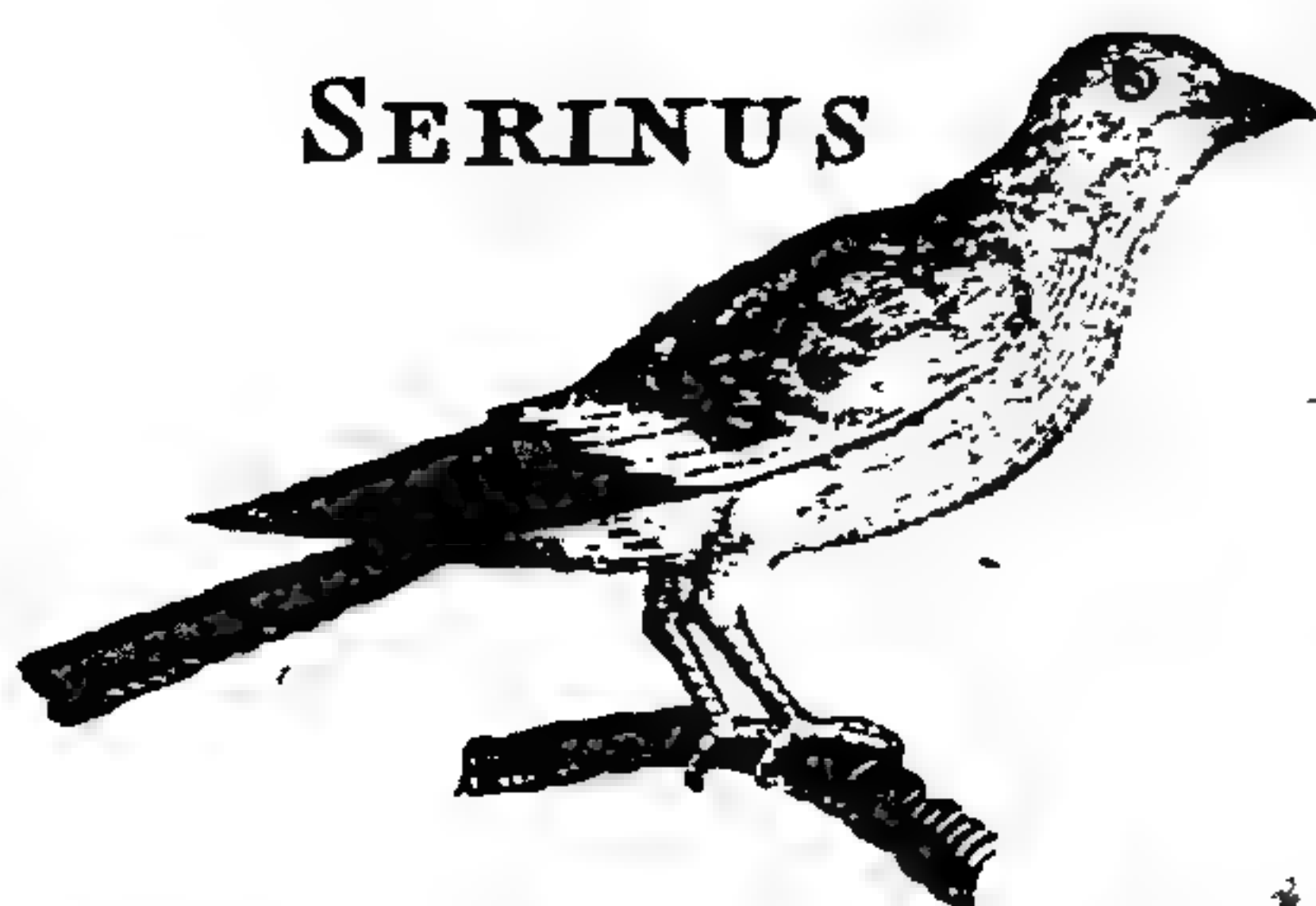
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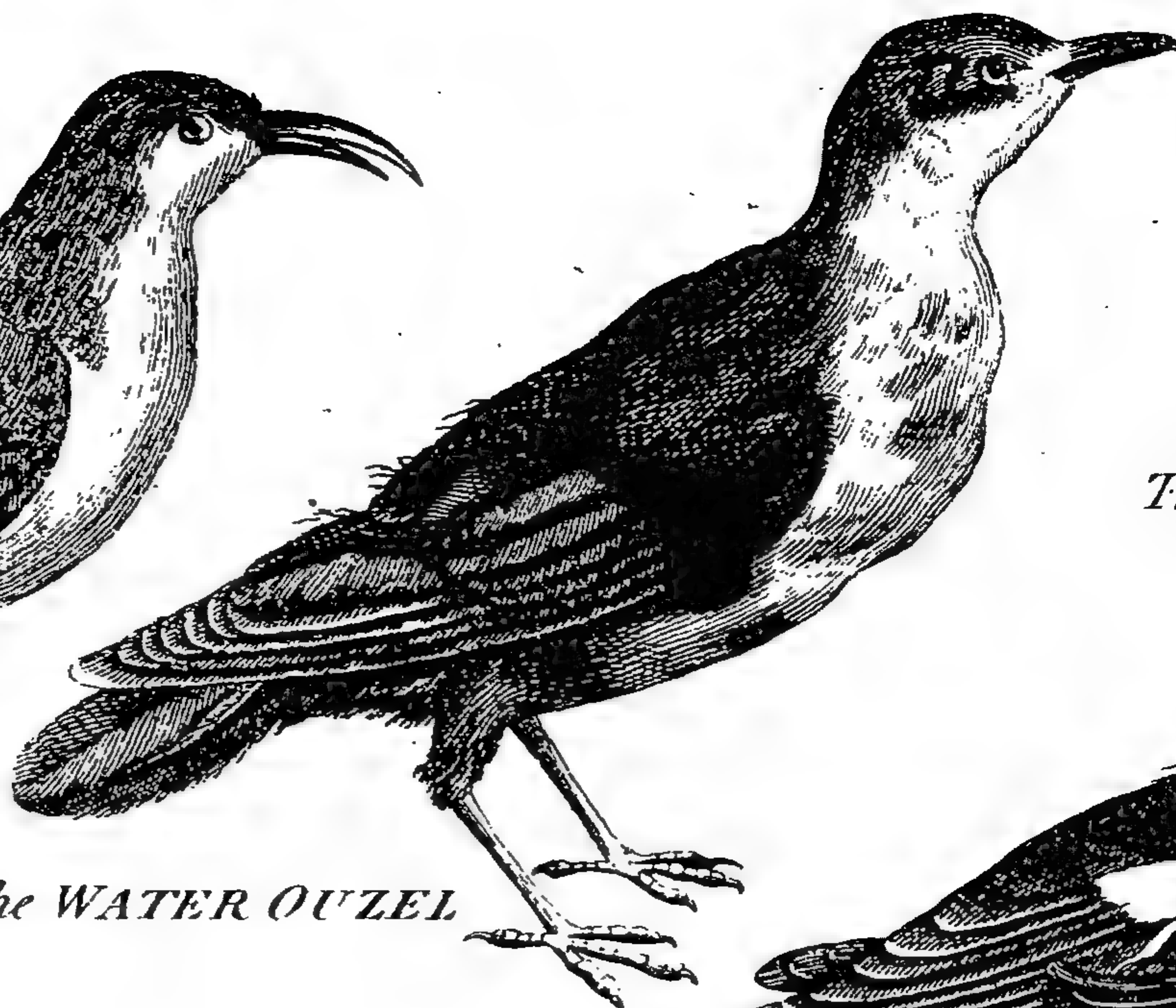




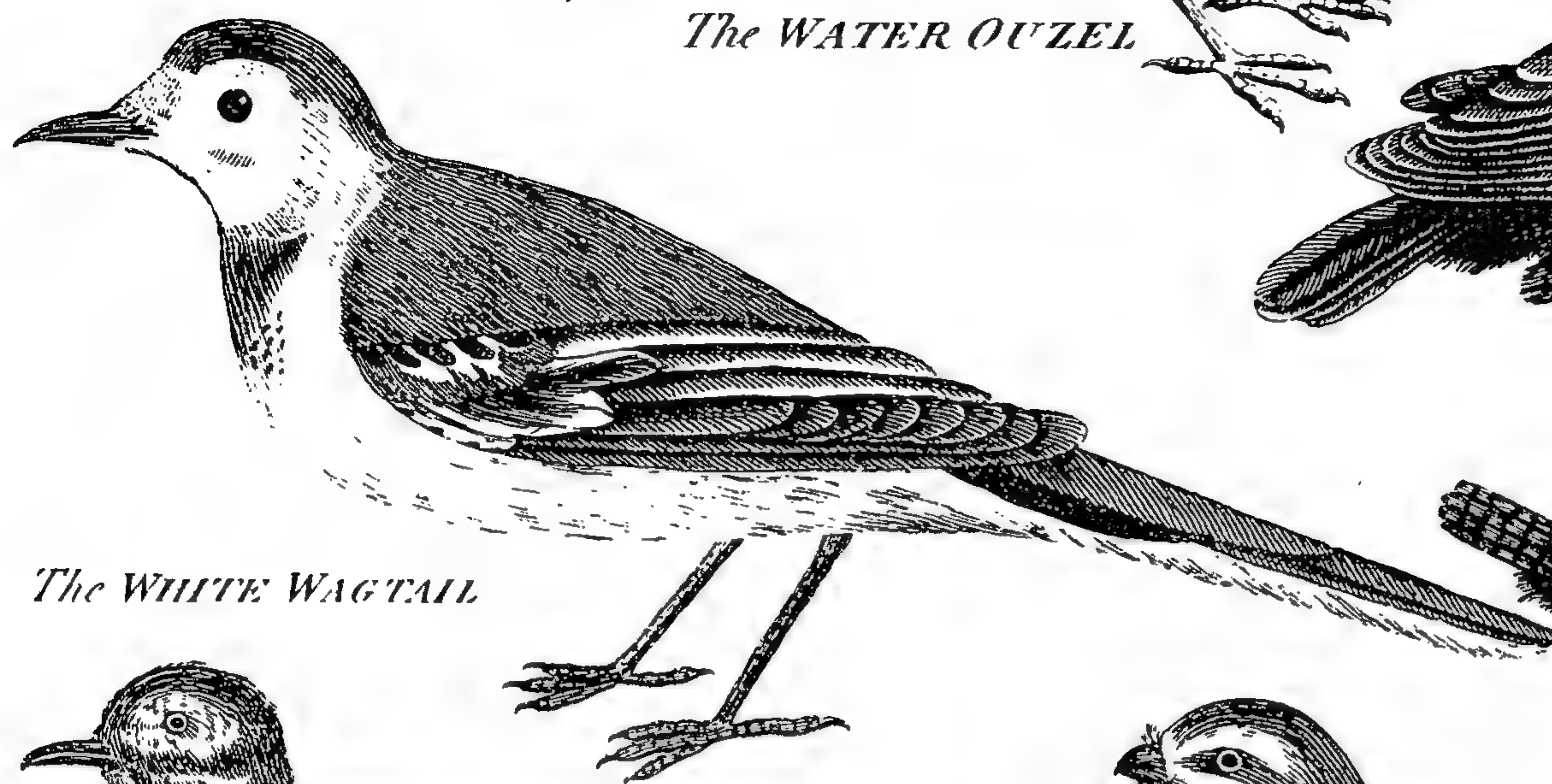
*The OXEYE CREEPER*



*The STONE CHATTER*



*The WATER OUZEL*



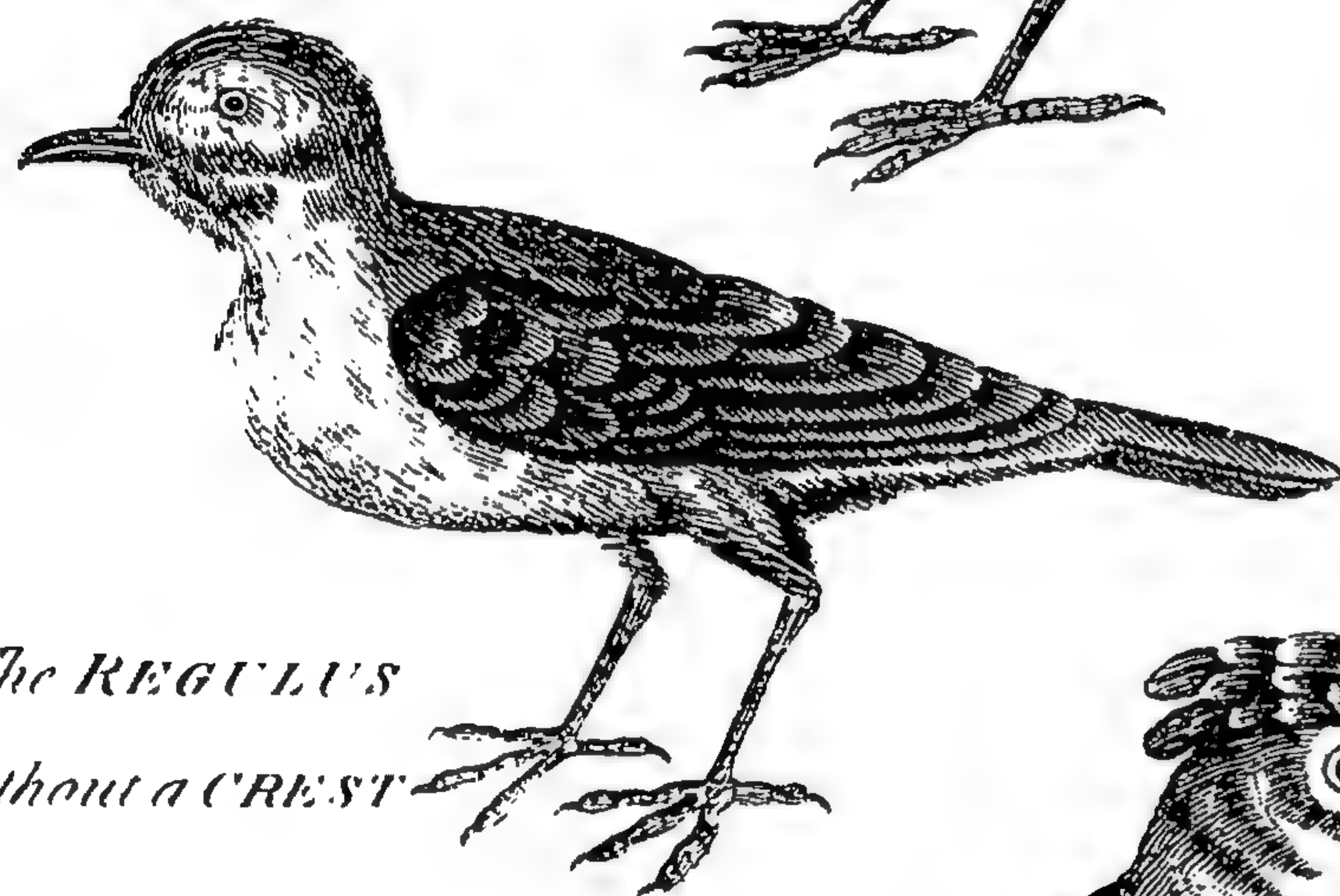
*The WHITE WAGTAIL*



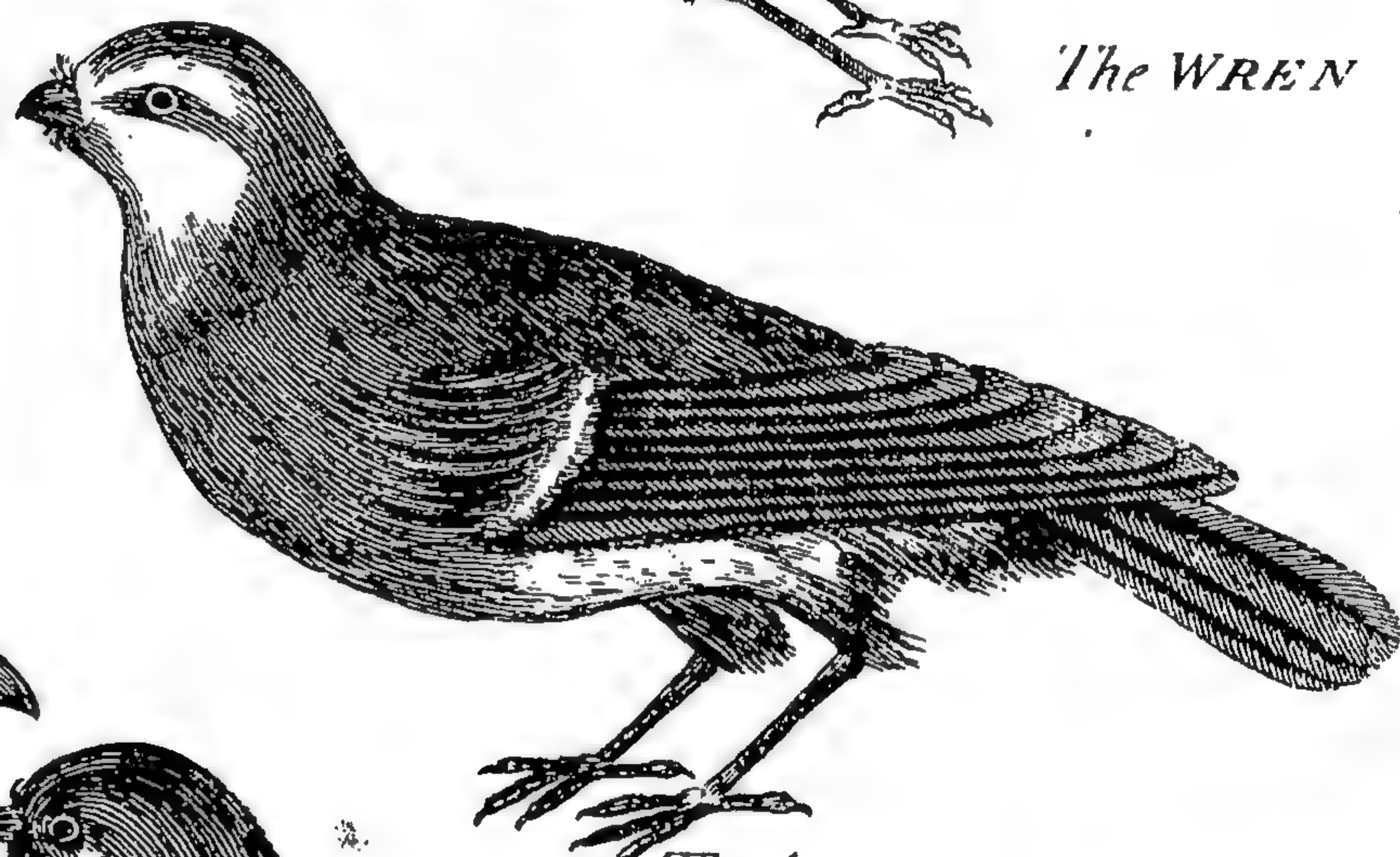
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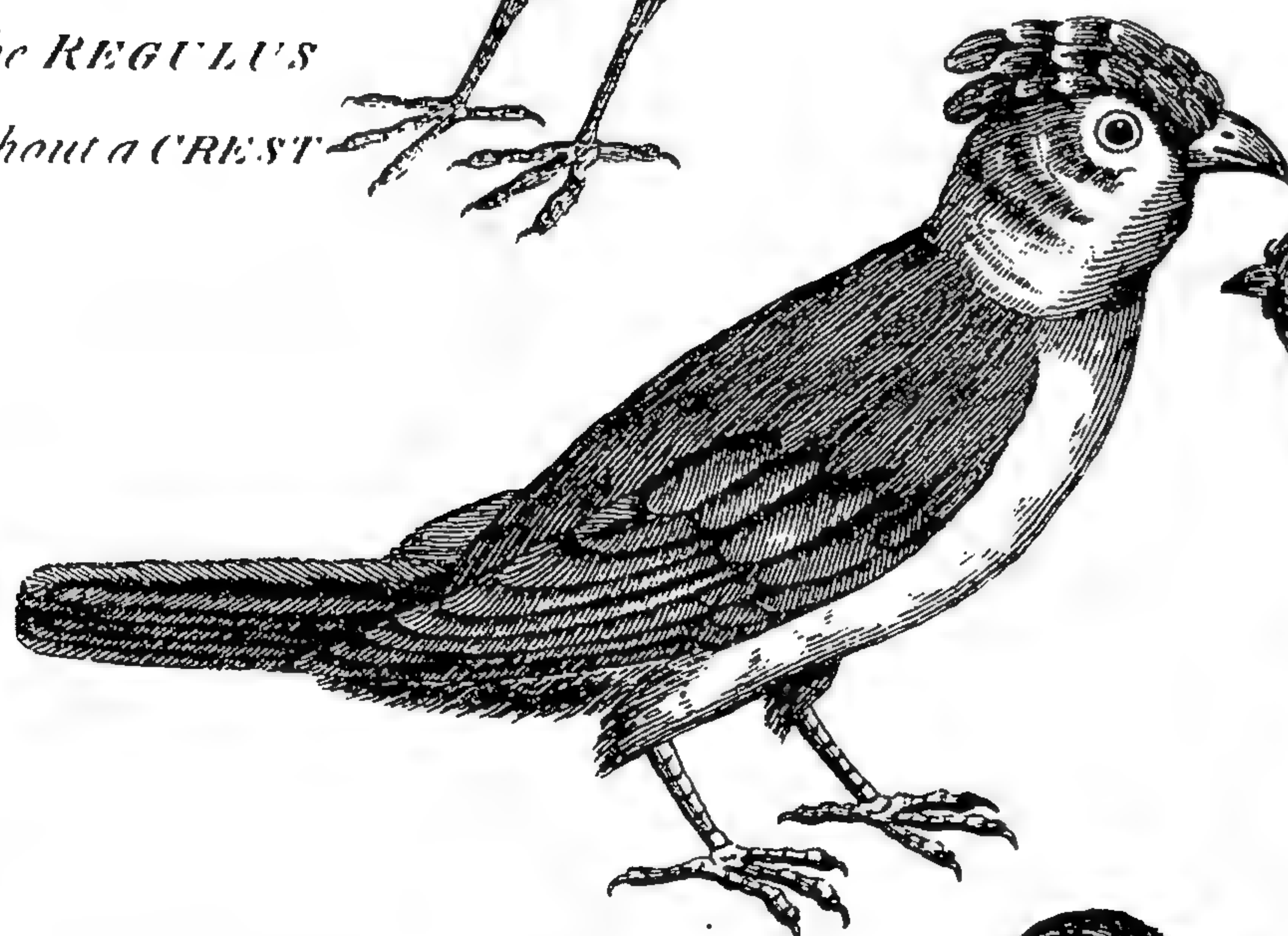
*The REGULUS  
without a CREST*



*The BLUE TITMOUSE*



*The CRESTED TITMOUSE*



*The LONGTAILED TITMOUSE*



*The COLE MOUSE*



*The BANK MARTIN*



*The BLACK MARTIN*





three inches long, and formed like that of a magpie, consisting of twelve feathers of unequal lengths: the cheeks and throat are white; the breast and belly are white, tinged with red: the legs and feet are black.

The nest is elegantly built of an oval shape, and about six inches deep; it is composed of moss, wool, feathers, and down. This bird lays from twelve to sixteen eggs, and the young follow the parents the whole winter.

There is another bird called the Marsh-Titmoufe, from its frequenting wet places, which is about four inches and an half in length, and three inches in breadth. The head is black, the cheeks white, the back greenish, and the feet of a lead colour.

The Bahama Tit-Mouse of Catesby, has a longish black bill, somewhat crooked: the head, back, and wings are brown, a white streak extending from the corner of the bill to the back-part of the head. The breast, and the upper-part of the wings are yellow. It has a long tail, brown above, and cream-coloured below.

The Crested Tit-Mouse is about five inches in length, and eight inches in breadth: the feathers on the top of the head are black, with white edges. It is distinguished from other birds of this kind by the crest, which is about an inch in height.

#### NATURAL HISTORY of the HUMMING-BIRD, and its Varieties.

**T**HOUGH this species is the least, it is certainly the most beautiful of all others. In quadrupeds the smallest animals are noxious, disagreeable, and loathsome; but the smallest of birds are the most beautiful, innocent, and sportive. Of all those that flutter in the garden, or paint the landscape, the Humming-Bird is not only the most inoffensive, but the most delightful to behold.

Of this charming creature there are six or seven varieties, from the magnitude of a wren down to that of an humble-bee. It appears astonishing to an European that there should be a bird existing so extremely small, and yet completely furnished out with bill, feathers, wings, and intestines, being an exact resemblance in miniature of those of the largest kind: but these are daily seen in infinite numbers, like butterflies in a warm summer's day, sporting in the fields of America, from flower to flower, and extracting their sweets.

The smallest of this class is about the size of an hazel-nut: the feathers on the wings and tail are black: those on the body, and under the wings, are a mixture of green and brown, glossed with a beautiful red cast: the head is adorned with a crest, which is green at the bottom, and of a bright yellow, or gold-colour at the top. The bill is black, straight and slender.

The larger Humming-Bird is without a crest on its head, and is about half the size of a common wren: from the throat, half way down the belly, it is covered with changeable crimson-coloured feathers, which, in different lights, appear in a variety of different colours. The heads of both these birds are small, studded with very little sparkling black eyes.

As soon as the sun is risen, variety of Humming-Birds are seen fluttering about the flowers, without ever lighting upon them. The rapidity of the motion of their wings is so great, that it is impossible to discern their colours, except by their glittering: they are perpetually on the wing, visiting flower after flower, and extracting its honey. For this purpose, nature has furnished them with a forked-tongue that enters the cup of the flower, and procures the nectar upon which alone they subsist. They have the name of Humming-Birds from the sound occasioned by the rapid motion of their wings.

The nest of the Humming-Bird is also worthy of admiration: it is suspended in the air, at the point of the twigs of an orange, a citron, or a pomegranate-tree. The male furnishes materials, and the female is the architect: the nest consists of moss, the fibres of vegetables, and cotton; it is admirably contrived, and about the size of half an hen's egg. In this the female lays two eggs, about the size of small peas, which are of a pure white, with a few yellowish spots. During the time of incubation, she seldom quits the nest, except a few minutes in the morning and evening, when the dew is upon the flowers and their honey is in perfection. In her absence the male supplies her place; the eggs being so very small that there would be danger in exposing it to the weather for ever so short a time. The time of incubation continues twelve days, at which time the young ones are excluded, and are about the size of a blue-bottle-fly. At first they are bare, afterwards they become clothed with down, which is at length succeeded by feathers.

On the continent of America, these birds continue to flutter the year round; for in those warm latitudes, where they have always plenty of flowers, there can be no deficiency of food. But it is otherwise in the islands of the Antilles, where, when the winter-season approaches, they retire, and, as some imagine, continue in a torpid state during the severity of that season. At Jamaica, and Surinam, where they have plenty of flowers the whole year, the Humming-Bird never disappears.

Besides the humming noise produced by their wings, travellers assure us, that these birds have a little interrupted chirrup; and Labat asserts that they have a most pleasing melancholy melody in their voices, though small and proportioned to the organs that produce it.

This pretty little animal's plumage was formerly used by the Indians in adorning the head-dress and belts; at present, however, they take the bird rather for the purpose of selling it as a curiosity to the Europeans, than that of ornament for themselves: the taste of savage finery is now wearing out even among the Americans.

The different sizes and varieties of this class of birds are usually distinguished by the following appellations: the larger Humming-Bird, the Long-Tailed Black-Capped Humming-Bird, the Lesser Humming-Bird, the Little Humming-Bird with a crooked Bill, the Humming-Bird with a black Bill, the Green Humming-Bird, and the Ash-Coloured Humming-Bird.



## C H A P. V.

*Containing the NATURAL HISTORY of BIRDS of the CRANE KIND, viz. the CRANE, the STORK, the HERON, the BITTERN, the SPOON-BILL or SHOVELLER, the FLAMINGO, the CURLEW, the AVOSETTA or SCOOPER, the WOODCOCK, the GODWIT, the SNIPE, the WATER HEN, the COOT, and the GREBE.*

NATURE has peopled the woods and the fields with a variety of the most beautiful birds; and, that no part of her extensive territories might remain untenanted, she has also stocked the water with feathered inhabitants. She has as carefully provided for the wants of her animals in this element, as she has for those that inhabit the air: she has defended their feathers with a natural oil to give them security, and united their toes by a webbed membrane to facilitate their motion. But she has formed a numerous tribe of birds that seem to partake of a middle nature, between the classes of land-birds that avoid the water, and of water-fowls that are peculiarly adapted for swimming and living in it: these have divided toes, and, on that account, seem fitted to live upon land; but they are furnished with appetites that attach them chiefly to the waters: they provide all their sustenance from watery places, but they are unqualified to seek it in those depths where it is usually found in the greatest plenty. They live indeed among the waters, but they are incapable of swimming in them; they have in general long legs, fitted for wading in shallow waters, or long bills proper for groping in them in pursuit of their prey.

Birds of this kind; habituated to marshy places, may be known either by the length of their legs, or the scaly surface of them. Birds of this kind too are generally bare of feathers half way up the thigh, and all of them above the knee at least; so that there is a surprizing difference between the leg of a Crane, which is naked almost up to the body, and the falcon, which is clothed almost to the toes.

In most birds of this class the bill is also very distinguishable. It is, in general, longer than that of other birds, and at the point is possessed of extreme sensibility, and furnished with nerves for the better feeling their food at the bottom of marshes, where it cannot be seen. Some of these birds are furnished with every convenience, having long legs for wading, long necks for stooping, and long bills for searching. It is generally observed if the legs of a bird are long, the neck is also long in proportion: there would otherwise be a defect in its conformation; as it would be lifted upon stilts above its food, without being furnished with an instrument to reach it.

If we take a comparative view of this class of birds, they seem inferior to those of every other tribe. Their nests are more simple than those of the sparrow, and their methods of obtaining food less ingenious than those of the falcon: in cunning they are exceeded by the pie, and they want the security of the poultry tribe. None of this kind therefore are taken under the protection of man; they are neither caged like the nightingale, nor kept tame like the turkey; but lead a life of precarious liberty in fens and marshes, or on the borders of the seas or lakes. They all live upon fish or insects, one or two only excepted: and even those which are called mud-suckers, such as the snipe and woodcock, perhaps grope the bottom of marshy places only for such insects as are deposited there by their kind.

Such of this class of birds as feed upon insects are fit to be eaten; but those which live entirely

upon fish, acquire in their flesh the rancidity of their diet, and are, in general, improper for our tables. To sailors on a long voyage, indeed, every thing that has life seems good to be eaten: their accounts, therefore, of the flesh of these birds are not to be depended upon; and when they mention the heron or the stork of other countries as luxurious food, we should always attend to the state of their appetites.

## NATURAL HISTORY of the CRANE.

VARIOUS are the accounts given of this bird's size and dimensions. According to Willoughby and Pennant, the Crane is from five to six feet long, from the tip to the tail. Other accounts say, it is above five feet high; and others that it is about the height of a man. Brisson, however, seems to give this bird its real dimensions, when he describes it as something less than the brown stork, about three feet high, and about four from the tip to the tail. Still, however, the numerous testimonies of its superior size are not entirely to be rejected; and, perhaps, that from which Brisson took his dimensions, was one of the smallest of the kind.

According to Brisson, the Crane is exactly three feet four inches from the tip to the tail, and four feet from the head to the toe. It is a tall, slender bird, with a long neck and long legs. The top of the head is covered with black bristles, and the back of it is bald and red, which is sufficient to distinguish this bird from the stork, to which it is nearly allied in size and figure. The plumage is ash-coloured; and two large tufts of feathers spring from the pinnion of each wing. These resemble hair, and are finely curled at the ends, which the bird has a power of erecting and depressing at pleasure. Gesner informs us, that in his time, these feathers were often set in gold, and worn as ornaments in caps.

The Crane is a bird with which all the ancient writers are familiar; and, in describing it, they have not failed to mix imagination with history. From the policy of the Cranes, they say, we are to look for an idea of the most perfect republic amongst ourselves; from their tenderness to their decrepid parents, we are to learn lessons of filial piety; but particularly from their conduct in fighting with the pigmies of Ethiopia, we are to receive our maxims in the art of war. In early times, the history of nature fell to the lot of poets only, and certainly none could so well describe it; but it is a part of their province to embellish also; and when, this agreeable science was claimed by a more sober class of people, they were obliged to take the accounts of things as they found them; thus fable ran down, blended with truth, to posterity.

There is doubtless some foundation of truth in these relations; but much more has been added by fancy. Cranes are certainly very social birds, and they are seldom seen alone. Their usual method of flying or sitting, is in flocks of fifty or sixty together; and while some of them feed, others stand like centinels upon duty. The fable of their supporting their aged parents, may have arisen from their strict connubial affection; as for their fighting with



with the pigmies, it may not be improbable but that they have boldly withstood the invasions of monkeys coming to rob their nests.

The Crane is a wandering, sociable bird, that subsists chiefly upon vegetables; and is known in every country of Europe, except our own. There is no part of the world, says Belonius, where the fields are cultivated, that the Crane does not come in with the husbandman for a share of the harvest. As birds of passage, they are seen to depart and return regularly at those seasons when their provision invites or repels them. They usually quit Europe about the latter end of autumn, and return in the spring. In the inland parts of the continent, they are seen crossing the country, in large flocks, making from the northern regions towards the south. In these migrations, however, they are not so resolutely bent upon expedition, but that if a field of corn presents itself in their way, they will stop for a time to regale upon it: on such occasions they do incredible damage, chiefly in the night; and when the husbandman rises in the morning he beholds his fields laid entirely waste by an enemy, whose swiftness his vengeance cannot overtake.

They were formerly known in this island, and held in great estimation, for the delicacy of their flesh: there was even a penalty upon such as destroyed their eggs; but, at present, this country is too populous and too well cultivated: though our fields may offer them a greater plenty, yet it is so guarded, that these birds find the venture greater than the enjoyment. We are indeed much better off by their absence than their company; for whatever their flesh might once have been, when, as Plutarch tells us, Cranes were blinded and kept in coops, to be fattened for the tables of the great in Rome; or, as they were brought up, stuffed with mint and rue, to the tables of our nobles at home; they are now considered all over Europe as wretched eating.

The Crane's favourite abode is the cold Arctic region. They come down into the more southern parts of Europe, rather as visitants than inhabitants: yet it is not well known how they portion out their time to the different parts of the world. The migrations of the field-fare, or thrush, are obvious, and well known; they go northward or southward, in one simple track; when their food fails them here, they have but one region to go to. But the Crane changes place like a wanderer. Gesner assures us, that the Cranes usually began to quit Germany from about the 11th of September to the 17th of October; from thence they were seen flying southward by thousands; and Redi tells us, they arrive in Tuscany a short time after. There they tear up the fields, newly sown, for the grain just committed to the ground, and do incredible mischief. In the severity of winter, it is probable they go southward, still nearer the line. They again appear in the fields of Pisa, regularly about the twentieth of February, to anticipate the spring.

It is amazing to conceive the heights to which they ascend, when they take these journeys. Their note is remarkably loud, and is often heard in the clouds, when the bird itself is invisible. As it is light in proportion to its size, and spreads a large expanse of wing, it is capable of floating at the greatest height, where the air is lightest; and thus secures its safety, by being entirely out of the reach of man.

Though unseen themselves in these aerial journeys, they have a distinct vision of every object below them. They govern and direct their flight by their cries; and exhort each other to proceed, or to descend, when opportunities for depredation present themselves. Their voice is the loudest of all the feathered tribe; and its peculiar clangor arises from the very extraordinary length and contortion of the

wind-pipe. In quadrupeds, the wind-pipe is short, and the glottis, or cartilages that form the voice are at that end next the mouth: in water-fowl the wind-pipe is longer, but the cartilages that form the voice are at the other end, which lies down in their belly. They have therefore much louder voices, in proportion to their size, than any other animals; for the note, when formed below, is reverberated through all the rings of the wind-pipe, till it reaches the air.

As these birds rise but heavily, they are extremely shy, and seldom suffer mankind to approach them. Their depredations are usually made in the darkest nights, when they sometimes visit a field of corn, and trample it down as if a thousand oxen had crossed over it. If, upon these occasions, they are invaded on any side, the bird that first perceives the danger is sure to sound the alarm, and all are speedily upon the wing. Sometimes they choose an extensive solitary marsh, where they range themselves all day; and not having that grain which is most agreeable to them, they wade for insects and other food, which they can procure without danger.

But though corn is the favourite food of this bird, there is hardly any thing that comes amiss to it. It is peaceful, both in its own society, and with respect to those of the forest. Though so large in appearance, it is sometimes pursued and disabled by a little falcon. It is an animal easily tamed, and, according to Albertus Magnus, has a particular affection for man. The female, which is easily distinguished from the male, by not being bald behind, lays no more than two eggs at a time, which are like those of a goose in size, but of a bluish colour. As soon as the young ones are capable of flying, the parents forsake them to shift for themselves; after first leading them to the places where their food is most easily found. As they grow old, their plumage becomes darker. It is not certainly known how long a Crane will live, but as a proof of its longevity, Aldrovandus assures us, that a friend of his kept one tame for above forty years. The common people of every country bear the Crane a compassionate regard to this day; the ancient prejudices in its favour perhaps still continue to operate. In some countries it is considered as an heinous offence to kill a Crane, and though the laws may not punish the offender, the people do not fail to resent the injury.

#### The BALEARIC CRANE.

This is nearly of the same shape and size as the ordinary Crane, with a long neck and long legs like others of the kind; but the bill is shorter, and the feathers are of a dark greenish grey: the most striking parts of this bird's figure are the head and throat. On the head appears a thick round crest, made of bristles, spreading on every side, and resembling rays standing out in different directions. The longest of these rays are about three inches and an half; and they are all topped with a kind of black tassels, which render them extremely beautiful. The sides of the head are bare, whitish, and edged with red; and a kind of bag or wattle hangs beneath the throat, resembling that of a cock, but is not divided into two. The eyes of this bird are large and staring; the pupils are black, with a gold-coloured iris; and, upon the whole, it has a very singular appearance.

This bird is a native of the coast of Africa, and the Cape de Verd islands, and feeds upon grass and seeds. As it runs it extends its wings, and moves very swiftly; otherwise its usual motion is very slow. In their domestic state they mingle with other poultry, and suffer themselves to be approached by every spectator. When they are disposed to go to rest, they generally make choice of some high wall, on which they perch in the manner of a peacock.

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## The NUMIDIAN CRANE.

This is vulgarly called by our sailors the buffoon bird; and by the French demoiselle, or lady; because it is supposed to imitate the gestures and dances of the Bohemian ladies. It does not follow people for what it can get, as animals in general do, but in order to be taken notice of; and when they perceive that they are observed, they immediately begin dancing. The French, who are skilled in the arts of elegant gesticulation, consider all its motions as lady-like, and graceful. Our English sailors, however, who are less competent judges of the dancing art, think this bird cuts a very ridiculous figure while it is thus in motion. It stoops, then rises, raises one wing, and then another. After that it turns round, sails forward, and then back again. Some are of opinion that these contortions are but the awkward expression of the poor animal's fears, and not of its pleasures.

It has appendages at the head which are three inches and an half in length, composed of white feathers, consisting of fine long fibres. The rest of the plumage is of a leaden grey colour, except some large feathers on the wings, which are darker, and a few feathers about the head and neck. Some have plumes of feathers erected like a crest on the top of the head. From the corner of each eye a streak of white feathers passes under the appendages, which form the great feathered ears. The fore part of the neck is adorned with black feathers, composed of very fine soft and long fibres, hanging down upon the stomach, and give the bird a very graceful appearance.

The length of this bird, from the tip of the bill to the end of the claws, is three feet and an half. The neck is fourteen inches; and it is ten inches from the thigh-bone to the extremity of the great toe. The fore side of the legs are covered with large scales: the sole of the foot has the appearance of shagreen leather, and the claws are black. It is an inhabitant of Numidia.

## The HOOPING CRANE.

The length of this bird, from the tip of the bill to the end of the claws, is five feet seven inches; the bone that extends from the knee to the foot is eleven inches; and the thigh is bare five inches above the knee: the middle toe is five inches long without the claw; and the bill, which is toothed at the point, is six inches long. The nostrils are placed in the channels in each side, at about a third part of the length from the head. The chaps are of a yellowish brown at the ends, and a little dusky in the middle. The top of the head is covered with a reddish skin; behind which there is a triangular spot, with one of the points backwards: the sides of the head, throat, neck, body, and tail, are white; but the nine outermost quills of the wings are black; and the tenth black and white; the rest being entirely white. The outer and middle toes are united by a web as far as the first joint, and the legs and feet are covered with black scales. This is thought to be a bird of passage: it is however seen in the spring about the mouths of rivers in Florida.

## The JABIRU.

This is one of the Crane kind, and a native of Brasil: the bill is black, and eleven inches long; and the body exceeds the size of the swan. It is covered with white feathers, the head and neck excepted, which are quite naked.

## The JABIRU GUACU.

This is also a native of Brasil. It has a red bill, which is thirteen inches long; though its body is not above the size of a common stork. This also

is covered with white feathers, except on the head and neck, which are entirely bare. The lower chap of this bird is broad and bends upwards.

There is another Brazilian bird of this kind, called the Anhima. It is a water fowl of the rapacious kind, and larger than a swan. The bill is black, and does not exceed two inches in length; but the most distinguishing mark is a horn growing from the forehead as long as the bill, and bending forward like that of the fabulous unicorn of the ancients. This horn is about the thickness of a crow-quill, perfectly round and regular, and of an ivory colour. This formidable bird seems to be armed at all points; for two strait triangular spurs, about as thick as a man's little finger, spring from the forepart of each wing; the claws are also long and sharp. These birds are never found alone, but always in pairs. The cock and hen wander together, and so great is their fidelity, that, when one dies, it is said the other never departs from the body, but refuses sustenance, and dies at the side of its companion.

## NATURAL HISTORY of the STORK.

At a transient view the Stork might be confounded with the crane. It is of the same size, and has the same formation as to the bill, neck, legs and body, but it is rather more corpulent. The colour of the crane is ash and black; that of the Stork is white and brown: the nails of the toes of the Stork are also very peculiar; not being clawed like those of other birds, but flat like the nails of a man. The crane has a loud piercing voice; the Stork is silent, and produces no other noise than the clacking of its under chap against the upper.

It has often been remarked, that the social affections are found to be stronger in their descent than their ascent; that the love of parents to their children, for instance, is commonly more ardent than that of children for their parents; though, from the state of things, and from the obligations which children owe their parents, one might reasonably expect it to be otherwise. However, there is a visible good design in this wise destination; we see in it, as in every object we seriously contemplate, the determination of high wisdom. The offspring both of the human and the animal race, come into the world feeble and helpless; and if the parental affection were not exceedingly forcible, they must perish in their weak and forlorn condition; and the creation would thus speedily be brought to an end. There is not the same reason for the return of affection in the offspring, and therefore we rarely find it in the animal world: soon as the young is able to provide for itself, a mutual forgetfulness generally ensues, and the parent grows as regardless of its offspring as the offspring of its parent.

There is however one creature, which contradicts this almost general rule in the animal world; and which is as remarkable for its love to its parents, as other creatures are for their love to their young: this is the Stork, whose very name in the Hebrew language (*chesidab*) signifies mercy or piety, and whose name in the English seems to be taken, if not directly, yet secondarily through the Saxon, from the Greek word *storge*, which is often used in our language for natural affection.

The Stork is a bird of passage, and is spoken of as such in scripture: "The Stork knoweth her appointed time, &c." Jer. viii. 7. Some say, that when they go away, the Stork which comes last to the place of rendezvous, is killed on the spot. They go away in the night to the southern countries. Thompson, in his Seasons, gives the following fine description of the passage of the Storks:

Where



# B I R D S . .

THE BLACK STORK



THE HERON



THE STORK



THE LITTLE HERON



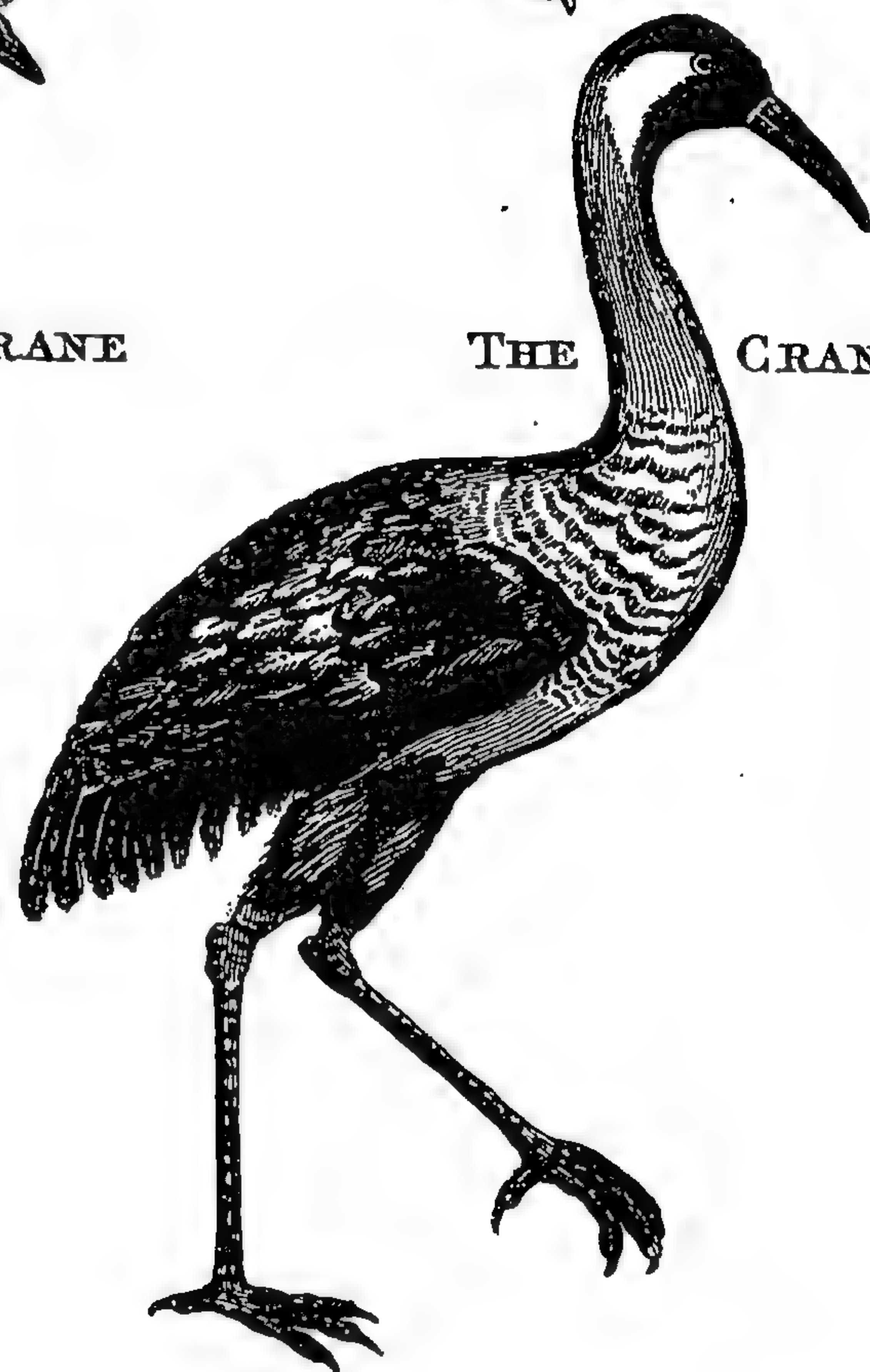
THE OSPREY



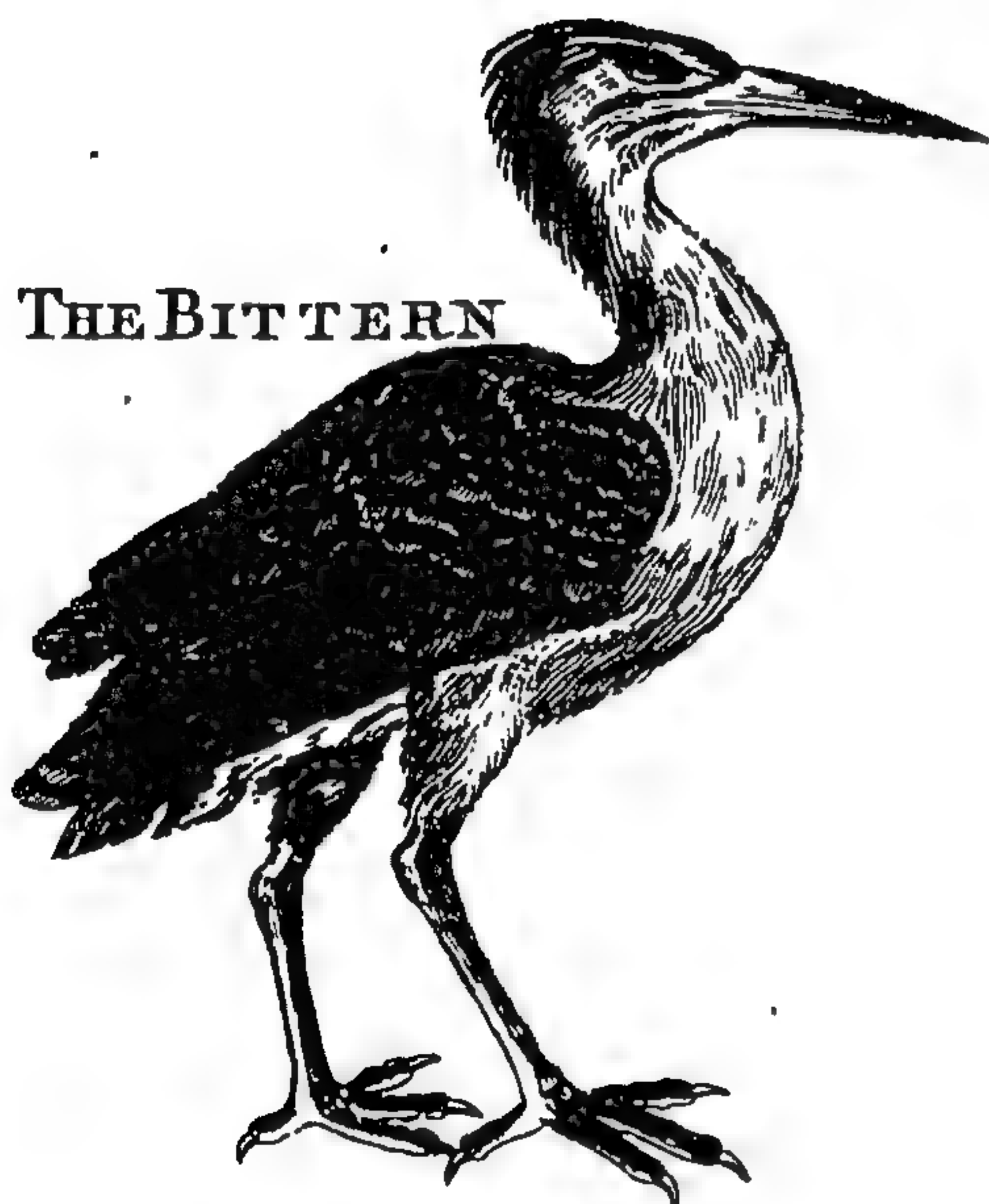
THE BALEARIC CRANE



THE CRANE



THE BITTERN



THE CURLEW



THE HAZEL HEN



THE WOODCOCK



THE SNIPE



THE LAPWING



THE LESSER TRINGA



THE RUFF





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Where the Rhine loses his majestic force  
In Belgian plains, won from the raging deep,  
By diligence amazing, and the strong  
Unconquerable hand of liberty;  
The Stork-assembly meets: for many a day  
Consulting deep and various, ere they take  
Their arduous voyage thro' the liquid sky.  
And now their rout design'd, their leaders chose,  
Their tribes adjusted, clean'd their vigorous wings,  
And many a circle, many a short essay  
Wheel'd round and round, in congregation full  
The figur'd flight ascends, and riding high  
Th' aerial billows, mixes with the clouds.

AUTUMN, 1. 859.

The Stork has a very long beak, and long red legs. It feeds upon serpents, frogs, and insects: as it seeks for these in watery places, nature has provided it with long legs; and as it flies away, as well as the crane and heron, to its nest with its prey; therefore the bill is strong and jagged, the sharp hooks of which enable it to detain its prey, which it might otherwise be difficult to hold. The abbe La Pluche says, "a friend of mine, who has an estate at Abeville, bounded by a river plentifully stored with eels, saw a heron one day carry off one of the largest of those creatures into his hernery, in spite of the efforts and undulations of the eel to oppose his flight." Thus we see the wise provider has not given those creatures such bills for nought: the Storks dig with theirs into the earth for serpents and adders, which, however large, they convey to their young, to whom the poison of those animals is perfectly inoffensive. The plumage of the Stork would be quite white, if it was not that the extremity of its wings are black, and also some small part of its head and thighs. It lays but four eggs, and sits for the space of thirty days.

But that which renders it the most remarkable is, its love to its parents, whom it never forsakes, but tenderly feeds and defends, even to death. The very learned and judicious Bochart, has collected a variety of passages from the ancients, wherein they testify this curious particular; that the Stork is eminent for its performance of what St. Paul enjoins, "Children's requiting their parents," 1 Tim. v. 4. This caused one of the seven wise men to reply to Cræsus, when he asked, "which of the animals was the most happy? The Stork; because it performs what is just and right by nature, without any compelling law." And hence one of our poets speaks thus finely of the Stork:

The Stork's the emblem of true piety:  
Because when age has seiz'd, and made his dam  
Unfit for flight, the grateful young one takes  
His mother on his back, provides her food;  
Repaying thus her tender care of him  
Ere he was fit to fly, by bearing her.—*Beaumont.*

The Dutch are very solicitous for the preservation of the Stork in every part of their republic. This bird seems to have taken refuge among their towns; and builds on the tops of their houses without any molestation. There it is seen resting familiarly in their streets, and protected as well by the laws as by the affections of the people. They are even of opinion that it will not live but in a republic.

#### NATURAL HISTORY of the HERON.

**T**HOUGH the crane, the stork, and the Heron bear a strong affinity to each other, the Heron may be distinguished from them, not only by its size, which is much less, but its bill, which in proportion is much longer; but particularly by the

No. 21.

middle claw on each foot, which is toothed like a saw, for the better seizing and securing its slippery prey. There is also an anatomical distinction, in which Herons differ from all other birds; they having but one cæcum, though all other birds have two.

Briffon has enumerated no less than forty-seven sorts of this tribe, all differing in figure, size, and plumage; but they all seem possessed of the same manners, and have one general character of cowardice, rapacity and indolence, yet insatiable hunger. Other birds grow fat by an abundant supply of food; but these, though excessively voracious and destructive, are ever found to be lean and hungry.

In proportion to its bulk, the common Heron is remarkably light, and seldom exceeds three pounds and an half in weight; though its length is three feet, and its breadth upwards of five feet. Its body is very small, and its skin remarkably thin: the bill is five inches long, from the point to the base: the claws are sharp and long; and the middlemost is toothed like a saw. But, notwithstanding it is thus formidably armed, it is so cowardly as to fly at the approach of a sparrow-hawk. It must be capable of enduring a long abstinence, as its food, which is fish and frogs, cannot be readily procured at all times. It however commits great devastation in our ponds; for, though nature has not furnished it with webs to swim, she has given it very long legs to wade after its prey: the smaller fry are his chief subsistence, and as these are pursued by their larger fellows of the deep, they are obliged to take refuge in shallow waters, where they find the Heron a still more formidable enemy.

The Heron wades as far as he can go into the water, where he impatiently waits the approach of his prey; which he darts upon with unerring aim, as soon as it appears in sight. In this manner he is said to destroy more in one week, than an otter in three months. And Mr. Willoughby assures us, it sometimes seizes fish of a tolerable size: "I have seen an Heron, says he, that had been shot, that had seventeen carps in his belly at once, which he will digest in six or seven hours, and then to fishing again. I have seen a carp taken out of a Heron's belly, nine inches and an half long. Several gentlemen who kept tame Herons, to try what quantity one of them would eat in a day, have put several small roach and dace in a tub, and they have found him eat fifty in a day, one day with another. In this manner a single Heron will destroy fifteen thousand carp in a single half year."

Though the Heron lives chiefly among pools and marshes, it builds on the tops of the highest trees, and sometimes on cliffs hanging over the sea. The nest is composed of sticks, lined with wool; and the female lays four large eggs of a pale green colour. Such, however, is the indolence of the nature of this bird, that it never takes the trouble of building a nest for itself, if it can procure one deserted by the owl or crow. Indeed it usually enlarges it, and lines it within; and, if the original possessor happens to renew his claim, the usurper treats him very roughly, and drives him away for his impertinence.

The Heron was formerly much esteemed as food, and made a favourite dish at the table of the great, but now it is thought detestable eating. It is said to be very long-lived; and Mr. Keyser says, sixty years is no very uncommon age.

#### The CRESTED HERON.

The bill of this elegant species is about six inches long, very strong and sharp pointed; the colour dusky above, and yellow beneath: the space round the eyes, between them and the bill, are covered with a bare greenish skin: the forehead and crown of

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the



the head are white; the hind-part being adorned with a beautiful pendant crest of black feathers. The hind-part of the neck, and the coverts of the wings are grey: the back is clad with down, and covered with the scapular feathers: the fore-part of the neck is white, elegantly spotted with a double row of black. The feathers, which are long and narrow, fall loose over the breast; the scapulars are grey, streaked with white. The ridge of the wing, and the breast, belly, and thighs are white; the latter dashed with yellow. The tail, which consists of twelve feathers, is ash-coloured; and the legs are of a dirty green.

#### The GREAT WHITE HERON or EGRET.

The length of this bird, from the tip of the bill to the end of the claws, is four feet and an half; and to the end of the tail three feet and a quarter: the breadth, with extended wings, is five feet and an half; and the weight about two pounds and an half. This bird is entirely white, by which it may be distinguished from the common Heron; it may also be distinguished by its size, which is smaller; by the length of its tail; and by its having no crest. This Heron is not often seen in England.

There is a bird of this kind, called the Lesser White Heron, which only differs from the preceding in size, and in having a crest.

The Little White Heron of Catesby, has a crooked red bill, with a yellow iris of the eyes: the body is white, and the feet are green.

#### The YELLOW and GREEN HERON of MARSEILLES.

The bill of this bird is black above, yellow below, and about three inches in length. The irides are white, as well as that part of the neck next the chin; but the rest of the neck, the top of the head, the breast and belly, are variegated with brown lines. The back is black; the wings are yellowish, spotted with black; and the tail is short; the feathers of which are short, and greatly resemble hair. The thighs are ash-colour, the feet black, and the claws yellow.

#### NATURAL HISTORY of the BITTERN.

**T**HE Bittern is less than the heron, and has a weaker bill, which is not above four inches in length: but it principally differs from the heron in its colour, which is usually of a palish yellow, spotted and barred with black. It has two kinds of notes; the one croaking, when it is disturbed; the other bellowing, which it commences in the spring, and ends in autumn. The latter is indeed like the roaring of a bull, but hollower and louder, and is heard at the distance of a mile. From the loudness and solemnity of this note, many have imagined that the bird made use of external instruments to produce it, and that so small a body could never eject such a quantity of note. The common people are of opinion that it thrusts its bill into a reed; which, like a pipe, assists in swelling the note above its natural pitch. Thompson the poet, and many others, suppose the Bittern puts its head under water, and then violently blowing, produces that noise. The fact is, its wind-pipe is fitted to produce the sound for which it is remarkable; the lower-part of it dividing into the lungs, is supplied with a thin loose membrane, which can be filled with a large body of air, and exploded at pleasure. It is certain that the Bittern is frequently heard where there are neither reeds nor waters to assist its sonorous invitations.

This is a very retired bird, concealing itself in the midst of reeds and rushes in marshy places.

Though it is of the heron kind, it is neither so destructive nor so voracious; and though it so nearly resembles the heron in figure, it differs from it greatly in its manners and its appetites. The food of the Bittern is chiefly frogs: it builds its nest with the leaves of water-plants; and lays six or seven eggs of an ash-green colour. The heron feeds its young for several days; the Bittern conducts its little ones to their food in about three days. The flesh of the Bittern has much the same flavour as that of the hare, and is free from the fishyness of that of the heron: it is therefore eagerly sought after by the fowler, and as it is with difficulty provoked to flight, and has a dull and flagging pace when on the wing, it does not often escape him. Towards the end of autumn, however, it seems to have shook off its wonted indolence, and is seen rising in a spiral ascent till it is quite lost from the view, making at the same time a very singular noise. Thus it often happens that the same animal assumes different desires at different times; and tho' the Bittern has acquired the name of the star-reaching-bird among the Latins, the Greeks have thought it merited the epithet of lazy.

This bird is called the mire-drum in the north of England.

#### The NORTH-AMERICAN BITTERN.

This is smaller than the English Bittern; the wing, when closed, not exceeding twelve inches in length. It resembles ours with regard to the colour and figure, but may be distinguished from it by carefully comparing them together.

#### The SMALL BITTERN.

This bird is fourteen inches in length, and twenty in breadth. The bill is two inches long, and sharp at the point; the upper-chap being black, and the lower yellow. The base of the bill is surrounded with a yellow naked membrane, extending as far as the nostrils. The tail is not above an inch long; and the feathers on the top of the head are brown, rising a little in the manner of a tuft. The upper-part of the neck, the back, wings, and tail are also brown, a few whitish and tawny spots excepted. The lower-part of the neck, the breast, and belly are of a light brown, mixed with white and flesh-colour.

#### The LITTLE BITTERN of BRASIL.

This bird is smaller than the common pigeon, but the length of its neck is about seven inches. The skin at the base of the bill is yellowish. The upper-part of the head is of the colour of steel, interspersed with palish brown feathers. The neck, breast, and belly are whitish; but the back is a mixture of black and brown. The long feathers of the wings are greenish, with a white spot at the extremity of each. The other parts are beautifully variegated with black, brown, and ash-colour; and the feet are of a blossom-colour. The bill is long, straight, and sharp, and black at the point; the iris of the eyes is of a gold-colour, and the tail does not extend beyond the wings.

#### NATURAL HISTORY of the SPOON-BILL, or SHOVELER.

**A**S we proceed in our description of the crane kind, birds of peculiar forms offer, not entirely like the crane, and yet not so far different as to rank more properly with any other class. Where the long neck and stilt-like legs of the crane are found, they make too striking a resemblance, not to admit such birds of the number; and though the bill or even the toes should entirely differ, yet the outlines

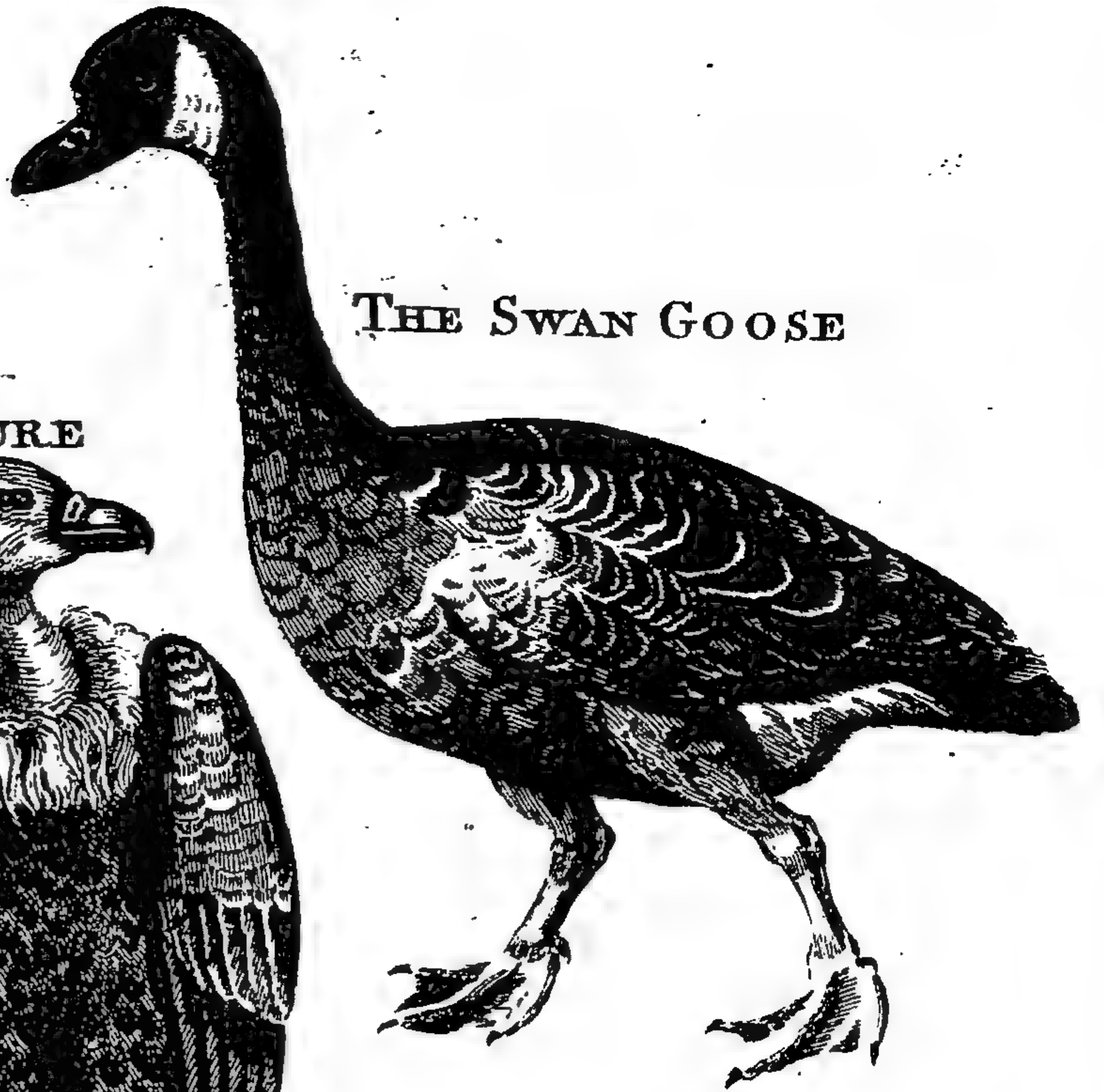


# BIRDS.

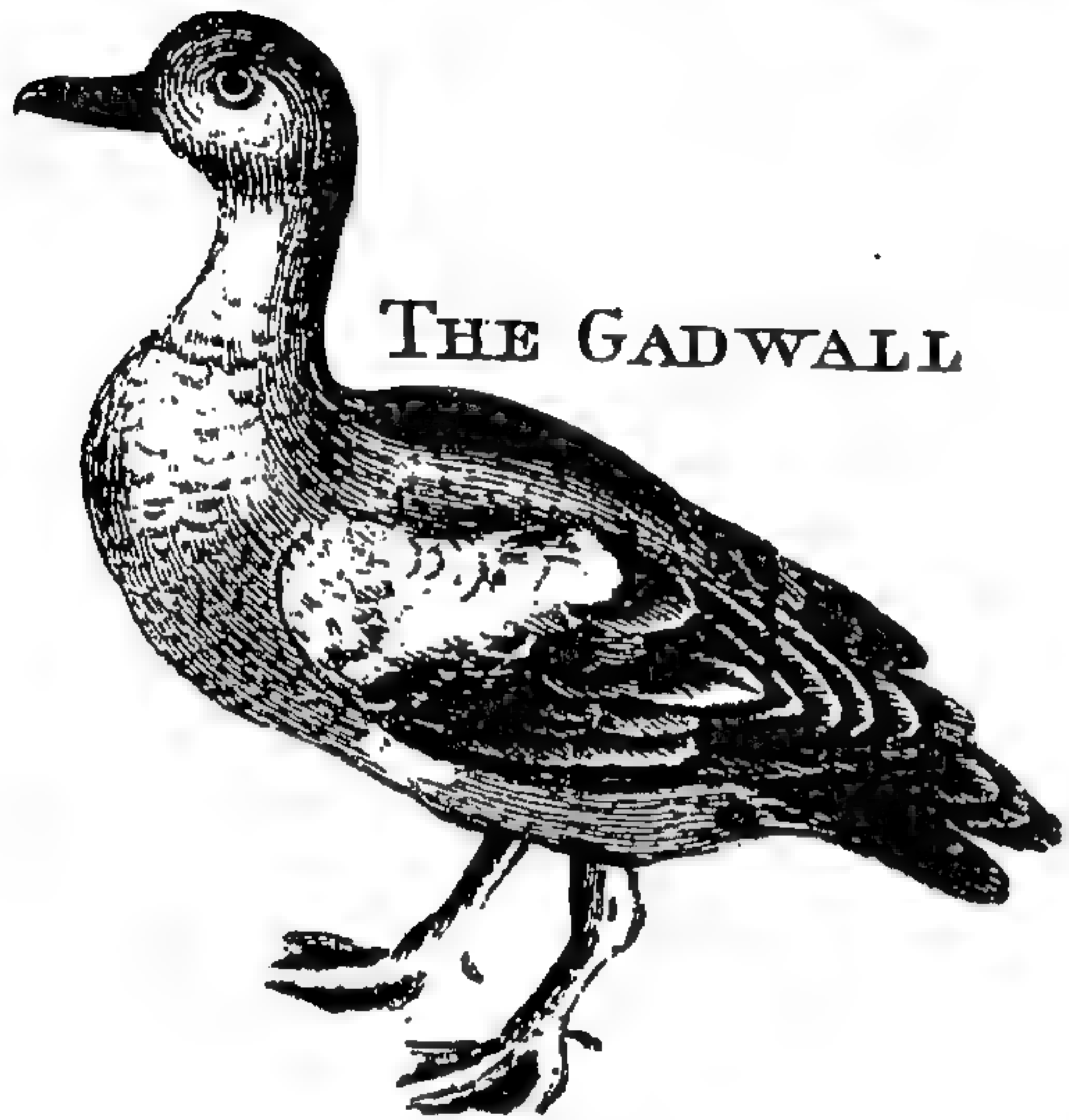


THE SPOON BILL

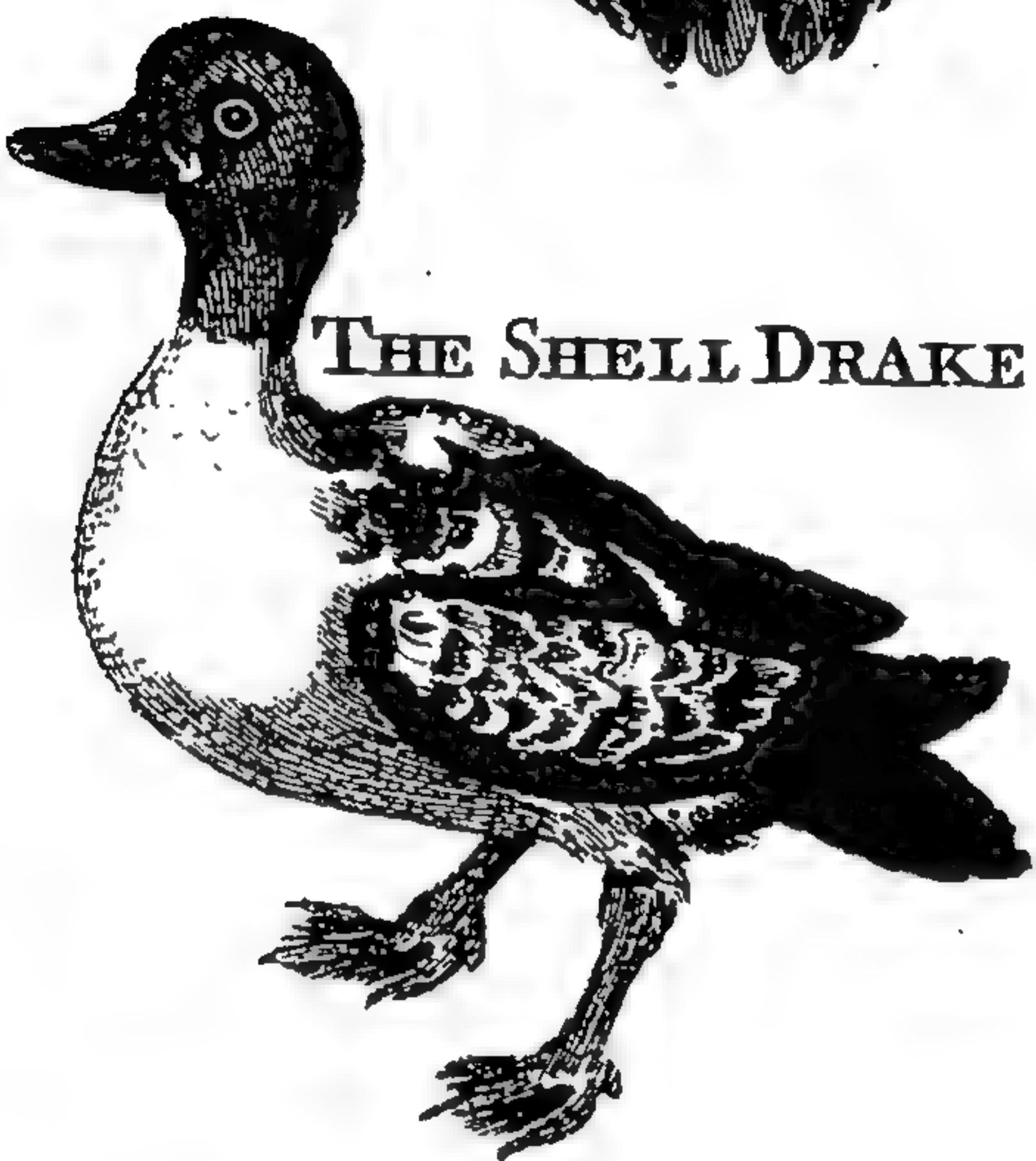
THE VULTURE



THE SWAN GOOSE



THE GADWALL



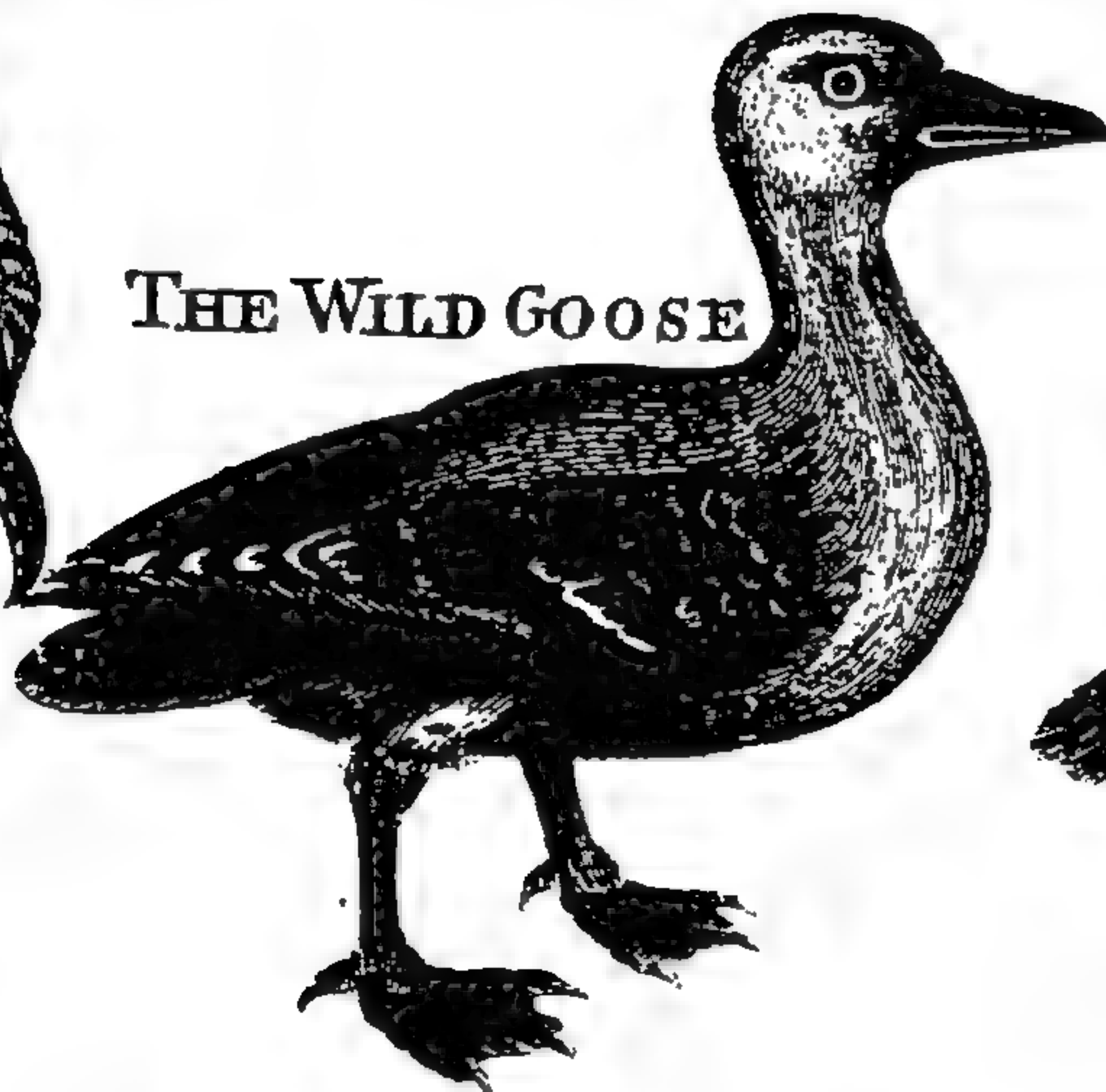
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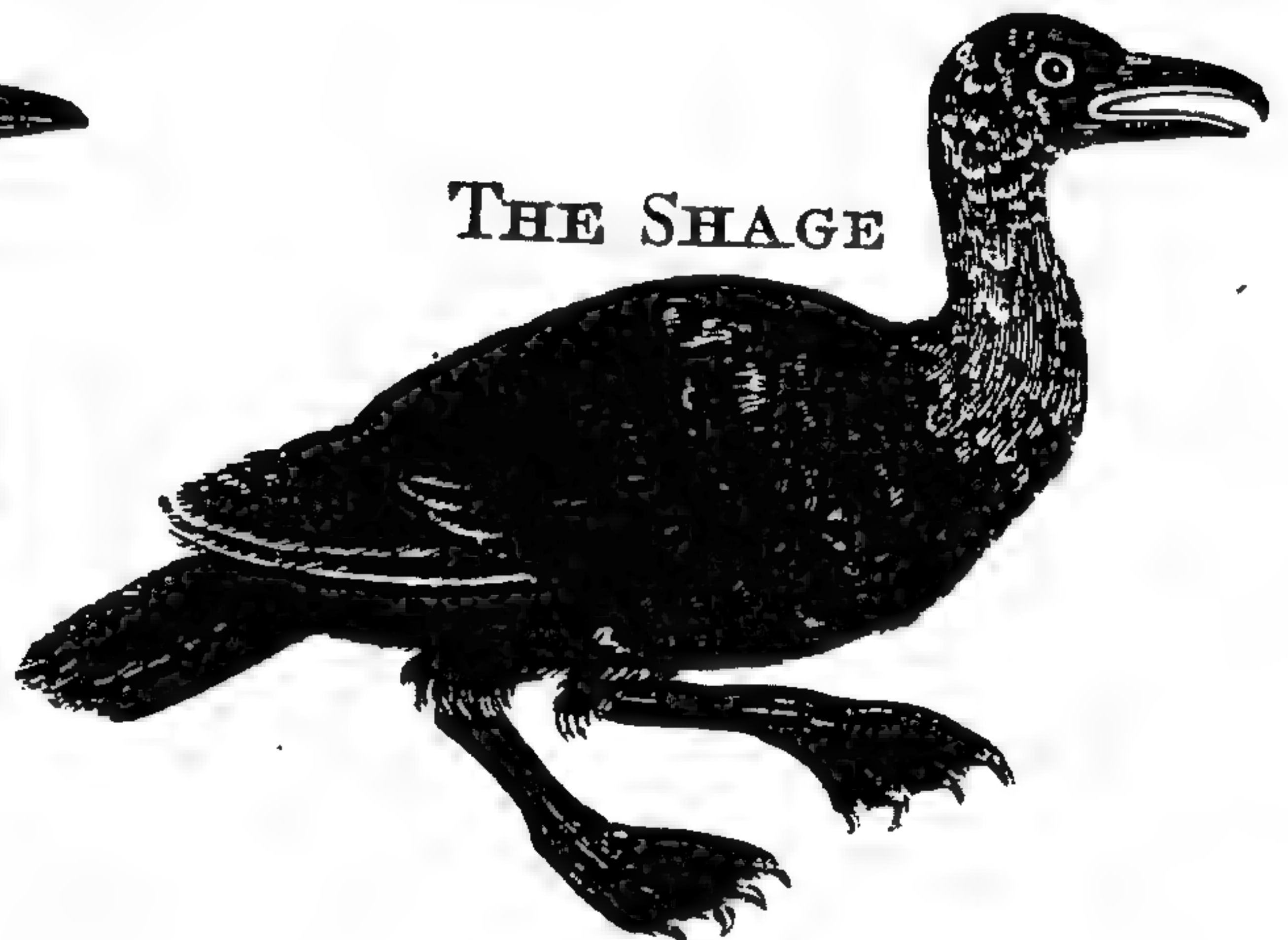
THE SHOVELER



THE CORMORANT



THE WILD GOOSE



THE SHAGE



THE GOLDEN EYE



THE PELICAN



THE SEA PHEASANT











# BIRDS.

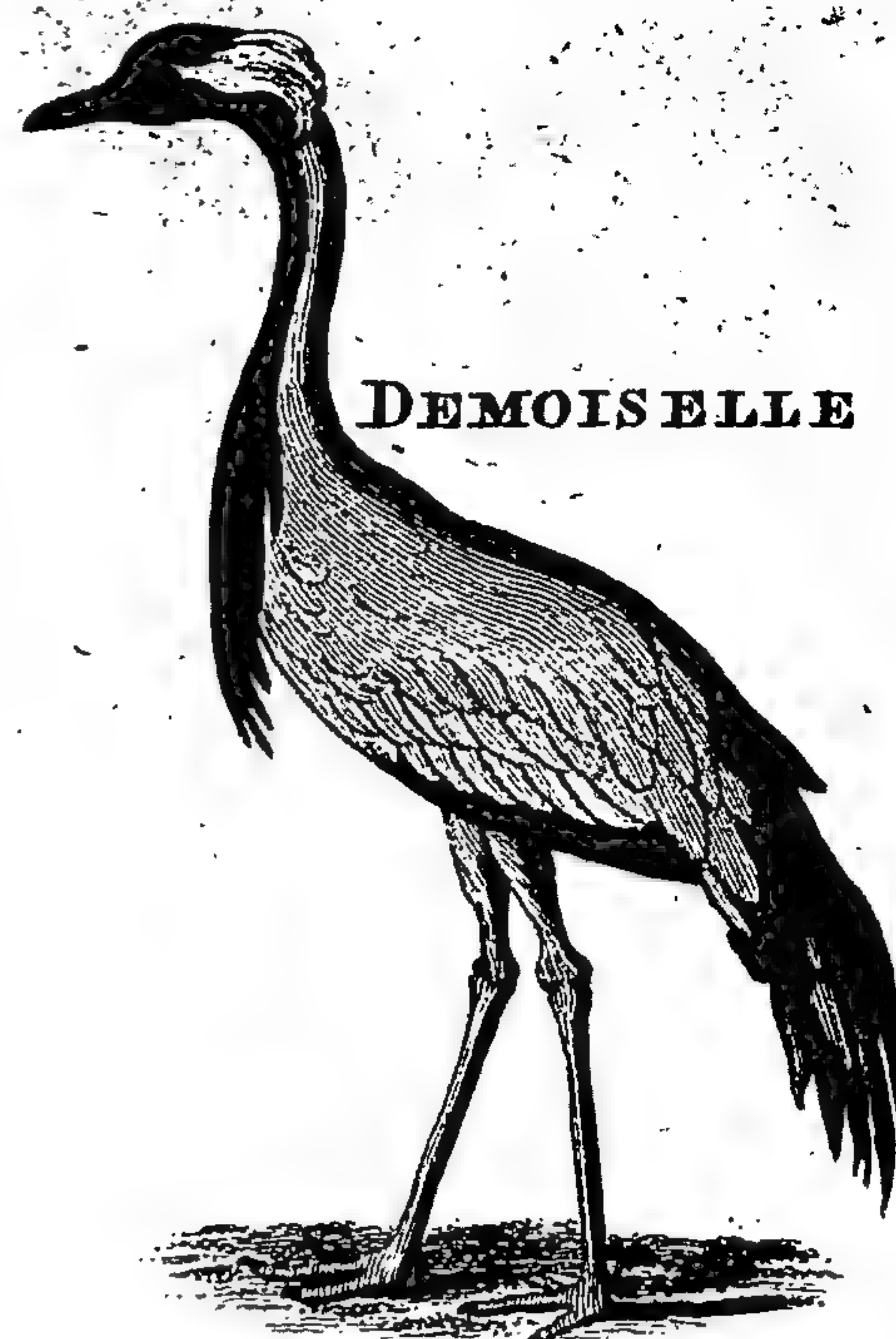
FLAMINGO



SOLAN GOOSE



DEMOISELLE



RING DOVE



ARACARI



TIPPET GREBE



CRESTED GREBE



HIMANTOPUS



GRUS



HERON



CASSOWARY



HOBBY



HOOPOE





outlines of the figure, and the natural habits and dispositions being the same, these are sufficient to mark their place in the general group of nature.

The Spoonbill is one of those birds which differs a good deal from the crane, yet approaches this class more than any other. The body is more bulky for its height, and the bill is very differently formed from that of any other bird whatever. Yet still it is a comparatively tall bird; it feeds among waters; its toes are divided; and it seems to possess the natural dispositions of the crane. The European Spoonbill is of about the bulk of a crane, but as the one is above four feet high, the other is not more than three feet three inches. The common colour of those of Europe, is a dirty white; but those of America are of a beautiful rose colour, or a delightful crimson. Beauty of plumage seems to be the prerogative of all the birds of that continent; and we here see the most splendid tints bestowed on a bird, whose figure is sufficient to destroy the effects of its colouring; for its bill is so oddly fashioned, and its eyes so stupidly staring, that its fine feathers only tend to add splendour to deformity. The bill, which in this bird is so very particular, is about seven inches long, and running out broad at the end, as its name justly serves to denote; it is there about an inch and a half wide. This strangely fashioned instrument, in some is black; in others of a light grey; and in those of America, it is of a red colour, like the rest of the body. All round the upper chap there runs a kind of rim, with which it covers that beneath; and as for the rest, its cheeks, and its throat, are without feathers, and covered with a black skin.

A bird so oddly fashioned, might be expected to possess some very peculiar appetites; but the Spoonbill seems to lead a life entirely resembling all those of the crane kind; and nature, when she made the bill of this bird so very broad, seems rather to have sported with its form, than to aim at any final cause for which to adapt it. In fact, it is but a poor philosophy to ascribe every capricious variety in nature to some salutary purpose: in such solutions we only impose upon each other; and often wilfully contradict our own belief. There must be imperfections in every being, as well as capacities of enjoyment. Between both, the animal leads a life of moderate felicity; in part making use of its many natural advantages, and in part necessarily conforming to the imperfections of its figure.

The Shoveler chiefly feeds upon frogs, toads, and serpents; of which, particularly at the Cape of Good Hope, they destroy great numbers. The inhabitants of that country hold them in as much esteem as the ancient Egyptians did their bird ibis: the Shoveler runs tamely about their houses; and they are content with its society, as an useful though an homely companion. They are never killed; and indeed they are good for nothing when they are dead, for the flesh is unfit to be eaten.

This bird breeds in Europe, in company with the heron, in high trees; and in a nest formed of the same materials. Willoughby tells us, that in a certain grove, at a village called Seven Huys, near Leyden, they build and breed yearly in great numbers. In this grove, also, the heron, the bittern, the cormorant, and the shag, have taken up their residence, and annually bring forth their young together. Here the crane kind seem to have formed their general rendezvous; and, as the inhabitants say, every sort of bird has its several quarter, where none but their own tribe are permitted to reside. Of this grove the peasants of the country make good profit. When the young ones are ripe, those that farm the grove, with a hook at the end of a long pole, catch hold of the bough on which the nest is built, and shake out the young ones; but sometimes the nest and all tumble down together.

The Shoveler lays from three to five eggs; white, and powdered with a few sanguine or pale spots. We sometimes see, in the cabinets of the curious, the bills of American Shovelers, twice as big and as long as those of the common kind among us; but these birds have not yet made their way into Europe.

### The FLAMINGO.

The Flamingo has the justest right to be placed among cranes; and though it happens to be web-footed, like birds of the goose kind, yet its height, figure, and appetites entirely remove it from that groveling class of animals. With a longer neck and legs than any other of the crane kind, it seeks its food by wading among waters; and only differs from all of this tribe in the manner of seizing its prey; for as the heron makes use of its claws, the Flamingo uses only its bill, which is strong and thick for the purpose, the claws being useless, as they are feeble, and webbed like those of water-fowl.

The Flamingo is the most remarkable of all the crane kind, the tallest, bulkiest, and the most beautiful. The body, which is of a beautiful scarlet, is no bigger than that of a swan; but its legs and neck are of such an extraordinary length, that when it stands erect, it is six feet six inches high. Its wings, extended, are five feet six inches from tip to tip; and it is four feet eight inches from tip to tail. The head is round and small, with a large bill, seven inches long, partly red, partly black, and crooked like a bow. The legs and thighs, which are not much thicker than a man's finger, are about two feet eight inches high; and its neck near three feet long. The feet are not furnished with sharp claws, as in others of the crane kind; but feeble and united by membranes, as in those of the goose. Of what use these membranes are, does not appear, as the bird is never seen swimming, its legs and thighs being sufficient for bearing it into those depths where it seeks for prey.

This extraordinary bird is now chiefly found in America, but was once known on all the coasts of Europe. Its beauty, its size, and the peculiar delicacy of its flesh, have been such temptations to destroy or take it, that it has long since deserted the shores frequented by man, and taken refuge in countries that are as yet but thinly peopled. In those desert regions, the Flamingos live in a state of society, and under a better polity than any other of the feathered creation.

When the Europeans first came to America, and coasted down along the African shores, they found the Flamingos on several shores on either continent, gentle, and no way distrustful of mankind. They had long been used to security, in the extensive solitudes they had chosen; and knew no enemies, but those they could very well evade or oppose. The negroes, and the native Americans, were possessed but of few destructive arts for killing them at a distance; and when the bird perceived the arrow, it well knew how to avoid it. But it was otherwise when the Europeans first came among them: the sailors, not considering that the dread of fire-arms was totally unknown in that part of the world, gave the Flamingo the character of a foolish bird, that suffered itself to be approached and shot at. When the fowler had killed one, the rest of the flock, far from attempting to fly, only regarded the fall of their companion in a kind of fixed astonishment: another and another shot was discharged; and thus the fowler often levelled the whole flock, before one of them began to think of escaping.

But at present it is very different in that part of the world; and the Flamingo is not only one of the scarcest, but of the shyest birds in the world; and the most difficult of approach. They chiefly keep near



near the most deserted and inhospitable shores; near salt-water lakes and swampy islands. They come down to the banks of rivers by day; and often retire to the inland, mountainous parts of the country, at the approach of night. When seen by mariners in the day, they always appear drawn up in a long close line of two or three hundred together; and, as Dampier tells us, present, at the distance of half a mile, the exact representation of a long brick wall. Their rank, however, is broken when they seek for food; but they always appoint one of the number as a watch, whose only employment is to observe and give notice of danger, while the rest are feeding. As soon as this trusty sentinel perceives the remotest appearance of danger, he gives a loud scream, with a voice as shrill as a trumpet, and instantly the whole cohort are upon the wing. They feed in silence; but, upon this occasion, all the flock are in one chorus, and fill the air with intolerable screamings.

From this it appears that the Flamingos are very difficult to be approached at present, and that they avoid mankind with the most cautious timidity: however, it is not from any antipathy to man that they shun his society, for in some villages, as we are assured by Labat, along the coast of Africa, the Flamingos come in great numbers to make their residence among the natives. There they assemble by thousands, perched on the trees, within and about the village; and are so very clamorous, that the sound is heard at near a mile distance. The negroes are fond of their company; and consider their society as a sort of heaven, as a protection from accidental evils. The French, who are admitted to this part of the coast, cannot, without some degree of discontent, see such a quantity of game untouched, and rendered useless by the superstition of the natives: they now and then privately shoot some of them, when at a convenient distance from the village, and hide them in the long grass, if they perceive any of the negroes approaching; for they would probably stand a chance of being ill-treated, if the blacks discovered their sacred birds were thus unmercifully treated.

Sometimes, in their wild state, they are shot by mariners; and their young, which run excessively fast, are often taken. Labat has frequently taken them with nets, properly extended round the places they breed in. When their long legs are entangled in the meshes, they are then unqualified to make their escape: but they still continue to combat with their destroyer; and the old ones, though seized by the head, will scratch with their claws; and these, though seemingly inoffensive, very often do mischief. When they are fairly disengaged from the net, they nevertheless preserve their natural ferocity; they refuse all nourishment; they peck and combat with their claws at every opportunity. The fowler is therefore under a necessity of destroying them, when taken; as they would only pine and die, if left to themselves in captivity. "The flesh of an old Flamingo," says Dampier, "is black and hard, though well tasted; but that of a young one is still better. But, of all other delicacies, the Flamingos' tongue is the most celebrated. A dish of Flamingos' tongues," continues he, "is a feast for an emperor." In fact, the Roman emperors considered them as the highest luxury; and we have an account of one of them, who procured fifteen hundred Flamingos' tongues to be served up in a single dish. The tongue of this bird, which is so much sought after, is a good deal larger than that of any other bird whatever. The bill of the Flamingo is like a large black box, of an irregular figure, and filled with a tongue which is black and gristly; but what peculiar flavour it may possess, we leave to be determined by such as understand good eating better than we do. It is probable, that the beauty and scarcity of the bird,

might be the first inducements to studious gluttony to fix upon its tongue as meat for the table. What Dampier says of the goodness of its flesh, cannot so well be relied on; for Dampier was often hungry, and thought any thing good that could be eaten: he avers, indeed, with Labat, that the flesh is black, tough, and fishy; so that we can hardly give him credit, when he asserts, that its flesh can be formed into a luxurious entertainment.

These birds, as was said, always go in flocks together; and they move in rank, in the manner of cranes. They are sometimes seen, at the break of day, flying down in great numbers from the mountains; and conducting each other with a trumpet cry, that sounds like the word Tococo, from whence the savages of Canada have given them the name. In their flight they appear to great advantage; for they then seem of as bright a red as a burning coal. When they dispose themselves to feed, their cry ceases; and then they disperse over a whole marsh, in silence and assiduity. Their manner of feeding is very singular: the bird thrusts down its head, so that the upper convex side of the bill shall only touch the ground; and in this position the animal appears, as it were, standing upon its head. In this manner it paddles and moves the bill about, and seizes whatever fish or insect happens to offer. For this purpose the upper chap is notched at the edges, so as to hold its prey with the greater security. Catby, however, gives a different account of their feeding. According to him, they thus place the upper chap undermost, and so work about, in order to pick up a seed from the bottom of the water, that resembles millet: but as in picking up this, they necessarily also suck in a great quantity of mud, their bill is toothed at the edges, in such a manner as to let out the mud, while they swallow the grain.

Their time of breeding is according to the climate in which they reside: in North America they breed in our summer; on the other side the line they take the most favourable season of the year. They build their nests in extensive marshes, and where they are in no danger of a surprize. The nest is not less curious than the animal that builds it: it is raised from the surface of the pool about a foot and a half, formed of mud, scraped up together, and hardened by the sun, or the heat of the bird's body: it resembles a truncated cone or one of the pots which we see placed on chimneys; on the top it is hollowed out to the shape of the bowl, and in that cavity the female lays her eggs, without any lining but the well cemented mud that forms the sides of the building. She always lays two eggs, and no more; and, as her legs are immoderately long, she straddles on the nest, while her legs hang down, one on each side, into the water.

The young ones are a long while before they are able to fly; but they run with amazing swiftness. They are sometimes caught; and, very different from the old ones, suffer themselves to be carried home, and are tamed very easily. In five or six days they become familiar, eat out of the hand, and drink a surprising quantity of sea-water. But though they are easily rendered domestic, they are not reared without the greatest difficulty; for they generally pine away, for want of their natural supplies, and die in a short time. While they are yet young, their colours are very different from those lively tints they acquire with age. In their first year they are covered with plumage of a white colour, mixed with grey; in the second year the whole body is white, with here and there a slight tint of scarlet; and the great covert feathers of the wings are black; the third year the bird acquires all its beauty; the plumage of the whole body is scarlet, except some of the feathers in the wings, that still retain their sable hue.



Of these beautiful plumes, the savages make various ornaments: and the bird is sometimes skinned by the Europeans to make muffs. But these have diminished in their price, since we have obtained the art of dying feathers of the brightest scarlet.

#### NATURAL HISTORY of the AVOSETTA, or SCOOPER.

**T**HE Avosetta may be distinguished from all other birds by the singular form of its bill, which turns up like a hook, in an opposite direction to that of the hawk or parrot: this extraordinary bill is about three inches and a half long, slender, compressed very thin, flexible, and of a substance like whalebone. The tongue is short: the head is black, as well as half the hind-part of the neck; all the under side of the body is of a pure white; the back, the coverts on the ridge of the wings, and some of the lesser quill-feathers, are of the same colour; the other coverts and the exterior sides and ends of the greater quill feathers are black: the tail consists of twelve white feathers: the legs which are very long, are of a fine blue colour, and naked higher than the knees; the webs are dusky, and deeply indented.

It feeds on worms and insects, which it scoops out of the sand with its bill. It lays two eggs about the size of those of the pigeon, which are white tinged with green, and spotted with black. These birds are often seen in winter on the eastern shores of this kingdom: in Gloucestershire, at the Severn's mouth; and sometimes on the lakes of Shropshire. It has a chirping peevish note, and frequently wades in the waters.

#### NATURAL HISTORY of the CURLEW.

**T**HE weight of the Curlew is about twenty-seven ounces; the length, from the top of the bill to the end of the claws, twenty-nine inches; and the breadth, when the wings are extended, three feet four inches. The bill of this bird, which is near six inches long, is narrow, a little crooked, and of a dark brown colour. The legs are long, bare, and of a dusky blue, having a thick membrane, which reaches to the first joint. This bird is of a greyish colour, and its flesh is very rank and fishy, notwithstanding an old English proverb in its favour. In the winter time, these birds frequent our sea coasts in large flocks, walking on the open sands; feeding on crabs and other marine insects. In the summer they retire to the mountainous part of the country, where they pair and breed. Their legs are of a pale olive colour, marked with irregular brown spots.

The lesser Curlew, called also the Wimble, greatly resembles the other, its size only excepted, for it weighs no more than twelve ounces.

#### NATURAL HISTORY of the WOODCOCK.

**T**HE Woodcock is smaller than the partridge, and usually weighs about twelve ounces: it is fourteen inches in length, and twenty-six in breadth. The bill is straight, and three inches long; the upper-part falling a little over the under at the tip: it is dusky towards the end, and reddish at the base: a black line extends from the bill to the eyes, and the forehead is of a reddish ash colour. The head, neck, back, and coverts of the wings are irregularly barred with a kind of red, black, grey, and ash colour; but on the head the black predominates: the

No. 22.

quill feathers are dusky, indented with red marks: the lower-part of the body is of a dirty white, with numerous transverse lines of a dusky colour. The tail, which consists of twelve feathers, is dusky on one web, and has a red mark on the other: the tips are ash coloured above, and white below. Their legs and feet are of a dusky pale colour, and the claws are divided to their origin. Their eggs are long, and of a pale red, with spots and clouds of a deeper colour.

During summer these birds are inhabitants of the Alps of Norway, Sweden, and the northern parts of Europe. When the frost commences there, they go into milder climates, where the ground is open, and adapted to their manner of feeding: they leave England about the latter end of February, or the beginning of March; though they have been sometimes known to continue here. They separate soon after their arrival here, but they pair again before they return to their native haunts.

They quit France, Germany, and Italy in the same manner, making the cold northern situations their general summer rendezvous. In the winter great numbers of them are seen as far south as Smyrna and Aleppo; and in the same season in Barbary. It has been said that some of them have appeared as far south as Egypt. Those which resort into the countries of the Levant, perhaps come from the desert of Siberia or Tartary, or the cold mountains of America. It is said that Woodcocks are unknown in North America, and Mr. Bank asserts that they are not common even in Newfoundland. The flesh of the Woodcock is esteemed a great delicacy.

#### NATURAL HISTORY of the GODWIT.

**T**HIS is not much unlike the woodcock, though it is much larger: it is sixteen inches in length, and twenty-seven in breadth: the bill is four inches long, black at the end, and of a pale purple at the base: the feathers of the head, neck, and back, are of a light reddish brown, marked in the middle with a dusky spot. The rump is remarkable for having a white ring. These birds are taken in the fens, in the same season, and in the same manner with the ruffs and reeves, and when fattened are esteemed a great delicacy. In September they appear on our coasts in small flocks, and remain with us the whole winter. Like the curlew, they walk on the open sands, and feed on insects.

The Red Godwit, which is not a very common species in England, is highly marked with red on the breast, and is more particularly distinguished by its bill, which is not quite straight, but a little reflected upwards.

Mr. Ray mentions a bird that he calls the Lesser Godwit, which weighs about nine ounces.

#### The GREAT AMERICAN GODWIT.

The bill of this bird is about four inches long, straight, and slender; and is of a bright yellow half way next the head, growing gradually dusky till it becomes black at the point. The eyes are more distant from the bill than in other birds. The head and upper-parts of the body are mottled with black and dark brown, except that the rump is brighter, with cross bars. The quills of the wings next the great ones are of an orange colour marked with small black spots. The belly and thighs are of a brownish white; the thighs are naked far above the knees; and the legs and feet are covered with dusky scales.

The White North-American Godwit is wholly white, except the tail, the greater quills, and the small feathers on the ridge of each wing, which are



of a dirty white. Its bill turns up towards the point, like that of the avoſetta.

#### NATURAL HISTORY of the GREEN SHANK.

**T**HESE birds appear in winter, in ſmall flocks, on our coaſts and wet grounds: the bill is two inches and an half; the upper-chap ſtraight, and the lower reflecting a little upwards: the head and upper-part of the neck are aſh coloured, marked with ſmall duſky lines: the coverts of the wings, the ſcapulars, and the upper-part of the back are of a browniſh aſh colour; the quill feathers are duſky, their inner-webs being ſpeckled with white: the breaſt, belly, thighs and tail are white; the latter being marked with undulated duſky bars. The legs, which are yellow, are long, ſlender, and bare above two inches higher than the knees. The exterior toe is united to the middle toe as far as the ſecond joint, by a ſtrong membrane, which borders their ſides to the very end. It is a bird of an elegant ſhape, but ſmall, not exceeding ſix ounces in weight.

The Spotted Red Shank is equal to the preceding in ſize, and is principally diſtinguiſhed by the colour of its legs, which is a very bright red.

#### NATURAL HISTORY of the SNIPE.

**T**HE Snipe weighs about four ounces; and is in length, from the tip of the bill to the end of the tail, about twelve inches; in breadth it is fourteen inches. The bill is three inches long, ſtraight, and of a duſky colour. The head is divided lengthways with four black and three red lines: the chin is white, and the neck is varied with brown and red: the ſcapulars are beautifully ſtriped with black and yellow. The quill feathers are duſky, but the edge of the fiſt, and the tips of the ſecondary feathers are white: the breaſt and belly are white: the tail is duſky, marked with ruſt colour, and tip with white; the legs are of a paliſh green, and the claws are black.

The young of theſe birds are ſo often found in England, that it is doubtful whether they entirely leave this iſland: it is, however, certain that ſome of them continue with us all the ſummer, making their neſts as well on the highſt mountains, as in our low moors and marſhes, and laying four or five eggs of a dirty olive colour, marked with duſky ſpots. Their food is like that of the woodcock, and their fleſh is eſteemed, as being tender, ſweet, and delicate.

#### The JACK-SNIPE, or JUDCOCK.

This is not above half the ſize of a ſnipe, its weight not exceeding two ounces. The crown of the head is black, tinged with ruſt colour; and the neck is varied with white, brown, and a pale red: the ſcapular feathers are brown, bordered with yellow; the rump is of a gloſſy bluſh purple; the belly white; the greater quill feathers duſky; the tail feathers brown, edged with tawny; and the legs of an aſh coloured green. The haunts and food of this ſpecies are the ſame as thoſe of the Snipe. It is much leſs frequent among us, and very difficult to be found.

In this groupe of ſmall birds of the crane kind a great many more might be added. We have enumerated thoſe with the long bill; and ſhall juſt mention thoſe which have ſhorter bills, under a collar of feathers round the neck of the male; namely, the ruff, the linot, the ſand-piper, the ſanderling, the dunlin, the purre, and the ſlint.

After theſe follow the lap-wing, the green plover,

the grey plover, the dottrel, the turnſtone, and the ſea-lark; which have all very ſhort bills.

Theſe birds of the crane kind, which have ſhort bills, are not, however, without proper provision for their ſubſiſtence. They run with ſurprizing rapidity along the ſurface of the marſh, or the ſea-ſhore, quartering their ground with great dexterity, and leaving nothing of the inſect kind that happens to lie on the ſurface.

In their ſeaſons of courtſhip they pair like other birds; but not without violent conteſts between the males for the choice of the females. A little bird of this tribe, called the ruff, has got the epithet of the fighter, merely from its great perſeverance and animolity on theſe occasions.

Theſe birds uſually breed in ſome iſland ſurrounded with ſedgy moors, where men ſeldom reſort. The eggs of all theſe birds are highly valued by the luxurious; though there is not much culinary art exerciſed upon them, for they are only boiled hard, and ſerved up without any further preparation. The young of this claſs being ſoon hatched, they arrive at maturity ſoon after their excluſion. As the fleſh of almoſt all theſe birds is in high eſtimation, variety of methods are uſed for taking them; and in particular the ruff and the reeve are greatly ſought after, particularly in Lincolnſhire and the iſle of Ely. Theſe are reckoned a very great delicacy, and it may not be amiſs to obſerve, that the name of the male is the ruff, and that of the female the reeve.

#### NATURAL HISTORY of the WATER-HEN and the COOT.

**T**HERE are two or three birds which ſeem to form the ſhade between water-fowls, properly ſo called, and thoſe of the crane kind. They, in ſome degree, partake of the form of a crane; and, though furniſhed with long legs and necks, rather ſwim than wade. They cannot, with propriety, be called web-footed, though they are not entirely diveſted of membranes, with which their toes are fringed on each ſide, and which enable them to ſwim.

The Water-Hen and the Coot fall under this claſs, and they have too near an affinity, not to be ranked in the ſame deſcription. They reſemble each other in ſhape, they both have long legs, and thighs which are partly naked: their wings are ſhort, their bills ſhort and weak, their foreheads are bald and deſtitute of feathers, their colour is black, and their habits are the ſame. In ſize they are different; the Water-Hen weighing about fifteen ounces, and the Coot twenty-four. In the Coot, the bald part of the forehead is black; in the Water-Hen it is of a beautiful pink colour; the toes of the Coot are edged with a ſcollopped membrane; thoſe of the Water-Hen are ſtraight and narrower.

In their manner of living there is leſs difference than in their figures; the hiſtory of one will therefore ſerve for both. Birds of the crane kind are furniſhed with long wings, and can eaſily change place; the Water-Hen, whoſe wings are ſhort, never deſerts the pond or river in which it ſeeks for provision, and the graſſy banks which form the margin of thoſe waters. Whether its food conſiſts of pond-weed, or water inſects, is not abſolutely certain; but pond-weed has been found in their ſtomachs. She makes her neſt upon low trees and ſhrubs by the water ſide; it conſiſts of ſticks and fibres. The female lays twice or thrice in a ſummer: her eggs are white with a tincture of green, and ſpotted with red. As ſoon as the young are excluded the egg, they ſwim in company with the parent,



parent, and imitate all their manners; but when they are able to provide for themselves she drives them off to seek their fortune.

The Coot, being a larger bird, is generally seen in larger streams, and more remote from mankind. The Water-Hen prefers inhabited situations, delighting in ponds, mores, and pools of water near gentlemen's houses; but the Coot continues in rivers, and among rushy margined lakes; where it makes a nest of the weeds which are supplied by the stream, laying them among the reeds, floating on the surface, and rising and falling with the water. It is supported by the reeds among which it is built, so that it is seldom washed into the middle of the stream: but when this accident happens, which is sometimes the case, the bird sits in her nest, like a mariner in his boat, and with her legs, steers her cargo into the nearest harbour.

To these birds, with long legs and finny toes, may be added one species more, with short legs and finny toes: the bird we mean is the grebe. It is much larger than the former, and its plumage is black and white: its legs are calculated entirely for swimming, and not for walking; from the knee upwards they are indeed hid in the belly of the bird, and consequently have very little motion. It is on this account that they seldom leave the water, and usually frequent those shallow pools where their faculty of swimming can be turned to the greatest advantage, in fishing and pursuing their prey. They chiefly frequent the meres of Shropshire and Cheshire, where they breed in a floating nest among reeds and flags, which are kept steady by the reeds of the margin. The grebe preys upon fish, and is almost perpetually diving. Even in swimming, it shews little more than the head above water, and is extremely difficult to be shot, as it darts down on the least appearance of danger. It never appears on land, and, though frequently disturbed, will never desert that lake, where, by diving and swimming, it can find food and security.

These birds are principally valued for the skin of their breast, the plumage of which is of a most beautiful white, and as glossy as satin. This part is made into tippets; but the skins lose their shining colour about February; and their breasts are entirely bare in breeding-time.

#### NATURAL HISTORY of the LESSER CRESTED GREBE.

**T**HIS species is smaller than a teal: the head and neck are black; the throat spotted with white; the whole upper-side of a blackish brown, except the ridge of the wing above the first joint, and the tips of the middle quill feathers, which are white; the breast, belly, and inner coverts of the wings are white. A tuft of long loose feathers hang backwards on each side behind the eyes. The irides are red, and the legs of a dirty green. A bare stripe of red extends from the bill to the eyes.

#### The WHITE and DUSKY GREBE.

This is about the size of a teal, and the bill is somewhat more than an inch long. The crown of the head is dusky, as well as the whole upper part of the body: the inner-coverts, the ridge of the wing, and the middle quill feathers are white; all the rest of the wing being dusky: the bill is joined to the eye by a bare skin of a fine red colour: the belly and the thighs are white, except a few black spots on the latter. In some birds the whole neck is ash-coloured.

This bird is frequently seen in Lincolnshire, where it breeds.

#### The LITTLE GREBE.

The length of this bird is ten inches, the breadth sixteen inches, and the weight about six or seven ounces. The head is thick set with feathers, which on the cheeks of old birds are of a bright bay. The top of the head, the neck, breast, and the whole upper-side of the body are of a deep brown, tinged with red: the greater quill feathers are dusky; the belly is ash-coloured, mixed with a silvery white; and the legs are of a dirty green. These birds dive with great swiftness, and remain a long time under water: their food is fish and water-plants. They frequent rivers, and form their nests in the water near the banks, which, not being fattened, rise and fall with the water. The female lays five or six white eggs, which she always covers when she quits the nest. How they are hatched appears astonishing, as the water rises through the nest, and always keeps them wet. The nest is about a foot thick, consisting of an amazing quantity of grass, and water-plants.

## C H A P. VI.

Containing the NATURAL HISTORY of WATER FOWL in GENERAL, viz. the PELICAN, the ALBATROSS, the CORMORANT, the GANNET, the GULL and PETREL, the PENGUIN and its Kind, the SWAN, the GOOSE, the DUCK, the GOLDEN-EYE, the SHIELDRAKE, the POCHARD, the GOOSANDER, the SCOTER, the WIGEON, the GADWELL, the GARGANEY, the TEAL, the TRINGA, the FULMAR, the WATER-RAIL, the KING-FISHER, and the BEE-EATER.

**T**HE first great distinction of Water-Fowl appears in the toes, which are webbed together for swimming. Those who have observed the feet or toes of a duck, will easily conceive how admirably they are formed for moving in the water. Men, when they swim, do not open the fingers, so as to let the fluid pass through them; but closing them together, present one broad surface to beat back the water, and thus push their bodies along. What man performs by art, nature has supplied to Water-Fowl; and has webbed their toes together, so that they expand two broad oars to the water; and thus, moving them alternately with the greatest ease, paddle along. We must observe also,

that the toes are so contrived, that as they strike backward, their broadest hollow surface beats the water; but as they gather them in again, for a second blow, their front surface contracts, and does not impede the bird's progressive motion.

The toes are not only webbed in their most convenient manner, but their legs are also fitted for swift progression in the water. The legs of all are short, except the flamingo, the avosetta, and the coriara: all which, for that reason, we have ranked among the crane kind, as they make little use of their toes in swimming. Except these, all web-footed birds have very short legs; and these strike while they swim with greater facility. Were the leg long,



it would act like a lever whose prop is placed to a disadvantage; its motions would be slow, and the labour of moving it considerable. For this reason, the very few birds whose webbed feet are long, never make use of them in swimming; the web at the bottom seems only of service as a broad base, to prevent them from sinking while they walk in the mud; but it otherwise rather retards than advances their motion.

In the web-footed kinds, the shortness of their legs renders them as unfit for walking upon land, as it qualifies them for swimming in their natural element. Their stay, therefore, upon land, is but short and transitory; and they seldom breed far from the sides of those waters where they usually remain. In their breeding seasons, their young are brought up by the water side; and they are covered with a warm down, to fit them for the coldness of their situation. The old ones also have a closer, warmer plumage, than birds of any other class. Our beds are composed of their feathers; as they neither mat nor imbibe humidity, but are furnished with an animal oil, that glazes their surface, and keeps each separate. In some, however, this animal oil is in too great abundance; and is as offensive from its smell, as it is serviceable for the purposes of household economy. The feathers, therefore, of all the penguin kind, are totally useless for domestic purposes; as neither boiling nor bleaching can divest them of their oily rancidity. Indeed, the rancidity of all new feathers, of whatever Water-Fowl they be, is so disgusting, that our upholsterers give near double the price for old feathers that they afford for new.

The skin of Water-Fowl is also generally lined with fat; so that, with the warmth of the feathers externally, and this natural lining more internally, they are better defended against the changes or the inclemencies of the weather, than any other class whatever.

As, among land-birds, so also among these, there are tribes of plunderers, that prey not only upon fish, but sometimes upon Water-Fowl themselves. There are likewise more inoffensive tribes, that live upon insects and vegetables only. Some Water-Fowls subsist by making sudden swoops from above, to seize whatever fish come near the surface; others again, not furnished with wings long enough to fit them for flight, take their prey by diving after it.

All Water-Fowl naturally fall into three distinctions. Those of the gull-kind, that, with long legs and round bills, fly along the surface to seize their prey. Those of the penguin-kind, that, with round bills, legs hid in the abdomen, and short wings, dive after their prey: and, thirdly, those of the goose-kind, with flat broad bills, that lead harmless lives, and chiefly subsist upon vegetables and insects.

The gull-kind are active and rapacious; constantly, except when they breed, keeping upon the wing; fitted for a life of rapine, with sharp straight bills for piercing, or hooked at the end for holding their fishy prey. In this class we may rank the albatross, the cormorant, the gannet or Soland goose, the shag, the frigate-bird, the great brown gull, and all the lesser tribe of gulls and sea-swallows.

The penguin-kind, with appetites as voracious, bills as sharp, and equally eager for prey, are yet unqualified to obtain it by flight. Their wings are short, and their bodies large and heavy, so that they can neither run nor fly. But they are formed for diving in a very peculiar manner. To this class we may refer the penguin, the auk, the skout, the sea-turtle, the bottle-nose, and the loon.

The goose kind are easily distinguishable, by their flat broad bills, covered with a skin; and their manner of feeding, which is chiefly upon vegetables. In this class we may place the swan, the goose, the

duck, the teal, the widgeon, and all their numerous varieties.

#### NATURAL HISTORY of the PELICAN.

MANY writers, lovers of the marvellous, have related strange things of this bird, which have been credulously received by others, and drawn into example; especially the tales they have told respecting the bird's remarkable regard for its young. Separate from fable, there is sufficient in the Pelican to attract our most serious notice, and to claim our best reflections.

The beak of the Pelican is peculiar and uncommon; as we shall soon shew: for the rest, it is in almost all respects like a swan; the body is as large, the neck is nearly as long; the legs are as short as in that bird, and the feet are black, very broad, and webbed in the same manner. The bird is also throughout of a whitish colour, though not of the pure white of the swan, except that the tips of some of the feathers near the beak and wings are black. The bird is so bulky and unwieldy, that it is fit only for the waters, though its feet being not placed so backward as in the swan, and some others, it walks better. Its note is very loud and strange for a bird: its voice, say some, resembles the braying of an ass; while others rejoin, that there requires some fancy to make out the resemblance. Bochart remarks, that as the Psalmist in Psal. cii. 6. compares himself to two birds, with respect to his moaning and lamentation, there must be something querulous and lamentable in the notes of these birds: and the Pelican, adds this great man, is a bird of horrid voice, which very much resembles the lamentation of a man grievously complaining. "By reason of the voice of my groaning—my bones, &c.—I am like a Pelican of the wilderness: I am like an owl of the desert."

The beak of the Pelican is very large and long: it is above a foot in length, and of the thickness of a child's arm at the bottom: the colour is bluish and yellowish, and the point is very sharp. The upper chap of it is formed, as in all other birds; but the lower is unlike every thing in nature: it is not composed of one solid piece, as in all other birds; but is made of two long and flat ribs, with a tough membrane connected to one and to the other: this is also extended to the throat, and is not tight, but very broad and loose, so that it can contain a vast quantity of any kind of provision.

The bird frequents the waters both fresh and salt, and feeds voraciously on fishes and water insects: but though it frequents those places, its favourite residence is in remote uncultivated forests and wildernesses, where it can remain quite undisturbed: its wings are long, and it easily flies backward and forward. In these places it builds, and there it breeds up its young, so that the Pelican of the wilderness or desert, is no improper phrase: though some small dabblers in natural knowledge have thought so, and on that account objected to the sacred Scriptures. Now the Pelican is to carry food for a numerous brood, as ravenous as herself, to these remote places: and this vast bag which nature hath given her at the throat, is the contrivance for the carrying of it. Who can refuse to see in this the wisdom and goodness of the all-wise Creator! In this bag she stores what she has caught, and flying away to the distant place of her residence, this anxious and laborious parent feeds her young from that repository. If some person in early time, quite unacquainted with the history of the bird, saw her alight in the midst of a desert, among a brood of ravenous young ones, and feed them from this bag, it would not be unnatural for him to suppose, however



strange the thing must be in itself, that it was with her own blood she fed them. Thus arose, from a mistake, the story of this wonder, which faithful ignorance has propagated through so many ages; and which moralists and poets have from the earliest times drawn into an emblem of paternal affection. Though certainly, without any reference to things false and marvellous, there is sufficient instruction for parents, from the labour, diligence, and amazing storge which God had planted in this Pelican of the wilderness!

In the year 1745, there was a Pelican shewn in London, brought by captain Pe'ly from the Cape of Good Hope, where they are larger than any where else; and of which we find the following account in Edwards's History of Birds. "From the point of the bill to the angle of the mouth is twenty inches of our English measure, which is six inches more than any natural historian has found it: the academy of Paris having measured one which was about fourteen inches, Paris measure I suppose; and our countryman Willoughby measured one, brought from Russia, which he makes fourteen inches English. I thought it something incredible in Willoughby's description, that a man should put his head into the pouch under the bill, till I saw it performed in this bird by its keeper, and am sure a second man's head might have been put in with it at the same time." He also observes, that the skin round the eye is bare of feathers, and the pouch, when dry, appears of the consistence and colour of a blown dry ox's bladder, having fibres running its whole length, and blood-vessels crossing them, and proceeding from the sides of the lower-part of the bill, which opens into this pouch its whole length. It is thought to be a very long-lived bird; some writers say, it lives to sixty or seventy years. It seems to inhabit the greatest part of the old world, it being found in many climates both north and south, as well as the intermediate latitudes: it being pretty common in Russia, and abounding in Egypt.

Father Morolla, in his voyage to Congo, informs us, that in his journey to Singa, he observed certain large white birds, with long beaks, necks and feet, which whenever they heard the least sound of an instrument, began to dance and leap about the rivers, where they always reside, and of which they are great lovers: this, he said, he took a great pleasure to contemplate, and continued often upon the banks of the rivers to observe.

Let the atheist, then, who doubts or disbelieves the being of God or the creation of this world by omnipotent wisdom, let him only turn his eyes upon this extraordinary bird, and ask his own heart, whether he can really believe such a creature the work of chance! Let the parent contemplate the Pelican, and from its admirable regard to its young, and the surprizing provision made by Providence for their support, learn the power and the excellence of parental storge; and blush to be exceeded by an irrational creature! And from the view, let the christian learn dependence upon his God, who having so wisely, and wonderfully provided for the nourishment and preservation of the animal world, will undoubtedly take due care of their temporal as well as eternal welfare, who with the humility, cheerfulness, love and submission of children, submit themselves to the will of their Father and God.

The flesh of this bird however smells very rancid, and tastes worse than it smells. The native Americans kill vast numbers: not to eat for, they are not even fit for the banquet of a savage; but to convert their large bags into purses and tobacco-pouches. They also dress the skin with salt and ashes, rubbing it well with oil, and then forming it to their purpose. It thus becomes so soft and pliant, that the Spanish

women sometimes adorn it with gold, and convert it into work-bags.

#### NATURAL HISTORY of the ALBATROSS.

**T**HIS may be said to be one of the first of the gull-kind: it is one of the largest and most formidable birds of Africa and America. Its body is larger than that of the pelican, and its wings, when extended, measure ten feet from tip to tip. The bill, which is yellowish, is six inches long, and terminates in a crooked point: the top of the head is of a lightish brown; the back is of a dark brown, spotted with black; and the belly is white. The toes are webbed, and of a flesh colour.

This bird inhabits the tropical climates, and is also seen as far as the heights of Magellan in the South Sea. It is one of the most formidable of the aquatic tribe; not only living upon fish, but also upon water-fowl. Like all the gull kind, it preys upon the wing; and chiefly pursues the flying-fish, that are forced from the ocean by the dolphins. Our seas appear to be forsaken by every class of animated nature: but in the tropical seas, and the southern latitudes beyond them, various species of the gull kind are seen hovering on the wing, at a thousand miles distance from the shore. The flying fish are continually rising to escape from their pursuers of the deep, only to encounter equal dangers in the air.

If we may credit Wiquefort, these birds are often seen sleeping in the air, entirely remote from land, with their head under one wing, and the other employed in beating the air. We will not presume to vouch for Mr. Wiquefort's veracity, but it is certain that few birds float upon the air with more ease than the Albatross; or support themselves a longer time in that element.

The Albatross has a peculiar affection for the penguin, and a pleasure in its society. Captain Hunt, who for some time commanded at our settlement upon Falkland islands, says he was often amazed at the union preserved between these two birds, and the regularity with which they built together. In that desolate spot, where the birds never dreaded the encroachments of men, they were seen to build with an amazing degree of uniformity; their nests covering fields by thousands, and resembling a regular plantation: but since they have been disturbed by men, the society is broken up, and the nests are totally destroyed.

#### NATURAL HISTORY of the CORMORANT.

**T**HE Cormorant may be distinguished from all other birds of this kind, by its four toes being united together by membranes; and the middle toe being notched like a saw, to assist it in holding its fishy prey. This species weighs about four pounds: it is thirty-two inches in length, and almost four feet in breadth. The bill, which is three inches and an half long, is dusky, and destitute of nostrils: the base of the lower chap is covered with a naked yellowish skin, that extends under the chin, forming a kind of pouch. The head and neck of this bird are of a sooty blackness, and the body thick and heavy; more resembling the figure of a goose than that of a gull.

These birds occupy the highest parts of the cliffs impending over the sea; their nests are composed of sticks, sea-tang, grass, &c. in which they lay six or seven eggs, which are white, and of an oblong form. At the approach of winter, they are seen dispersed along the sea-shore, and ascending up the

mouths



mouths of fresh-water rivers, carrying destruction to all the finny tribe. They are remarkably voracious, having almost sudden digestion: their appetite is for ever craving, and never satisfied; and this hunger is promoted by the vast quantity of small worms that fill their intestines.

With the grossest appetites, this bird has the rankest and most disagreeable smell of any bird, even when alive. Its form is disagreeable; its voice hoarse and croaking, and its qualities obscene. Milton, with great propriety, has made Satan personate this bird, to survey, undelighted, the beauties of Paradise, and sit on the Tree of Life devising Death.

This bird seems to be of a multiform nature, and, wherever fish are to be found, watches their migrations: it pursues its prey in fresh water lakes, as well as in the depths of the ocean; and preys by night as well as in the day-time. It is seldom seen in the air, except where there are fish below, and they must be near the surface, before it will venture to pounce upon them. It seldom makes an unsuccessful dip, and often rises with a larger fish than it can readily devour.

#### NATURAL HISTORY of the GANNET, or SOLAND GOOSE.

**T**HE Gannet weighs about four pounds, and a quarter: it is three feet one inch in length, and six feet two inches in breadth. It is indeed about the size of a tame goose, but its wings are longer. The bill is six inches long, straight almost to the point, where it inclines down, and the sides are irregularly jagged, that it may hold its prey with greater security. It differs from the cormorant in size, being larger; in its colour, which is chiefly white; and having no nostrils, but in their stead a long furrow, extending almost to the end of the bill. The eyes, which are full of vivacity, are surrounded with a naked skin of a fine blue. A narrow slip of black bare skin, extends from the corner of the mouth to the hind part of the head; beneath the chin is another, that can be dilated like the pouch of the pelican, and is capable of containing five or six herrings. The neck is very long, the body flat, and very full of feathers.

Each bird, if left undisturbed, would only lay one egg in the year; but if that be taken away it will lay another; if robbed of that, then a third. A wise provision of nature to prevent the extinction of the species by accidents, and to supply food for the inhabitants of the places where they breed. The egg is white, and smaller than that of the common goose; the nest is large, and composed of grass, sea-plants, shavings, &c.

As these birds subsist entirely upon fish, they frequent those uninhabited islands where their food is found in plenty, and where they are undisturbed by mankind. The isle of Ailsa, in the firth of Clyde; the rocks adjacent to St. Kilda, a small isle near the Orkneys, the Skelig islands off the coasts of Kerry, in Ireland; and the Bass isle, in the firth of Edinburgh. In the last mentioned island, Dr. Harvey affirms that the surface is almost wholly covered, during the months of May and June, with nests, eggs, and young birds; so that it is scarcely possible to walk without treading on them. The rocks of St. Kilda seem to be as much resorted to by these birds, and the inhabitants of that small island are principally supported by them and their eggs throughout the year.

The Gannet is a bird of passage: its first appearance in those islands is in March; and it quits them in August or September; according as the inhabitants tell or leave the first eggs. Its motions may

probably be determined by the migrations of the immense shoals of herrings, that come pouring down at that season through the British channel, and supply all Europe as well as this bird with their spoil. The Gannet assiduously attends the shoal in their passage, accompanies them in their whole circuit round our island, and shares with our fishermen this exhaustless banquet. Whenever the Gannet is seen it is sure to announce to the fishermen the arrival of the finny tribe.

These birds are well known on most of our coasts, but not by the name of the Soland goose. They are called Gannets in Cornwall and Ireland, and even in Wales. Gannets are sometimes taken at sea by the following deception: the fishermen fasten a pilchard to a board, and leave it floating, which alluring bait decoys the unwary Gannet to its own destruction.

#### NATURAL HISTORY of the GULL and PETREL.

**T**HE larger Gulls live at the most remote distance from man; the smaller reside wherever they can take their prey; and visit the most populous places, when solitude can no longer grant them a supply. In this class the Gull, properly so called, may be placed; of which there are upwards of twenty different kinds; the Petrel, of which there are three; and the Sea-swallow, of which there are about the same number. Gulls are to be distinguished by an angular knob, on the lower chap; Petrels by being destitute of this knob; and Sea-swallows by their bills, which are sharp-pointed, straight, and slender. In their appetites and places of abode they all perfectly agree.

The Gull, and all its varieties, is seen with a slow-sailing flight hovering over rivers to prey upon the smaller kinds of fish; it follows the ploughman in fallow-fields to pick up insects; and, when living animal food is not to be obtained, it has no objection to carrion, or any thing of the kind that offers. But it is chiefly round our boldest rockiest shores that they are seen in the greatest abundance. It is on such shores that the rocks offer them a retreat for their young, and the sea is a sufficient supply. In the cavities of these rocks, of which the shore is composed, infinite variety of sea-fowls retire to breed in safety. The waves beneath, beating continually at the base, often wear the shore into an impending boldness; so that it appears to jut over the water; while the raging of the sea makes the place inaccessible from below.

Like all birds of the rapacious kind, the Gull lays but few eggs; sometimes one, sometimes two, but never more than three; it builds on the ledges of a rock, and its nest consists of long grass and sea-weed. Most of the kind have a fishy taste, with black stringy flesh; but the young are better food; and of these the poor inhabitants of our Northern islands, make their wretched banquets. They are almost strangers to any other food, and even salted Gull may be relished by those who know no better.

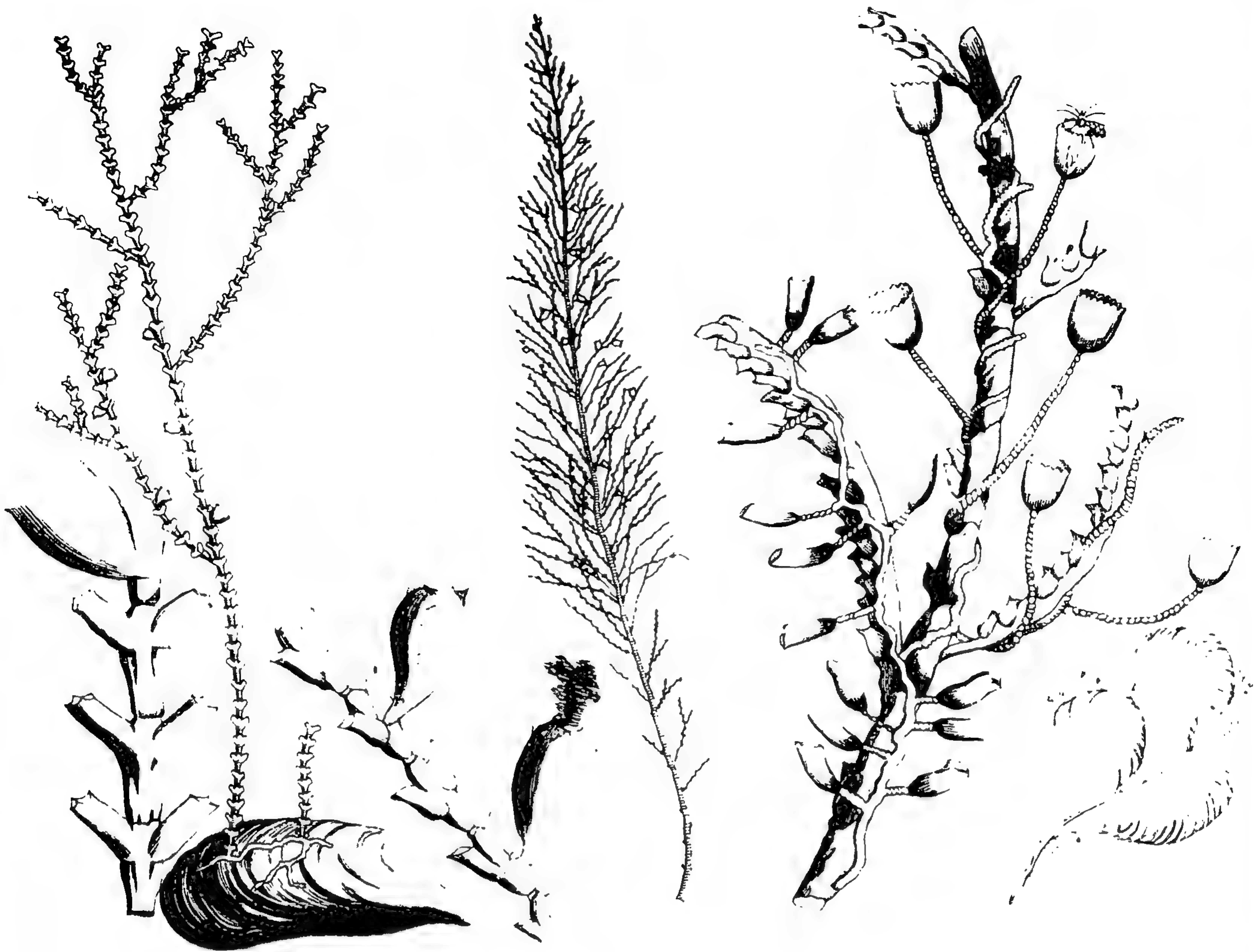
#### NATURAL HISTORY of the PENGUIN KIND.

**T**HESE birds are not long-winged and swift flyers like those of the gull kind: they are indeed but indifferently formed for flight, and still less for walking. The duck is not half so unweildy an animal as the whole tribe of the Penguin kind. The largest of them, which have a thick heavy body to raise, are totally unable to fly; their wings only serving them as paddles to help them forward, when they

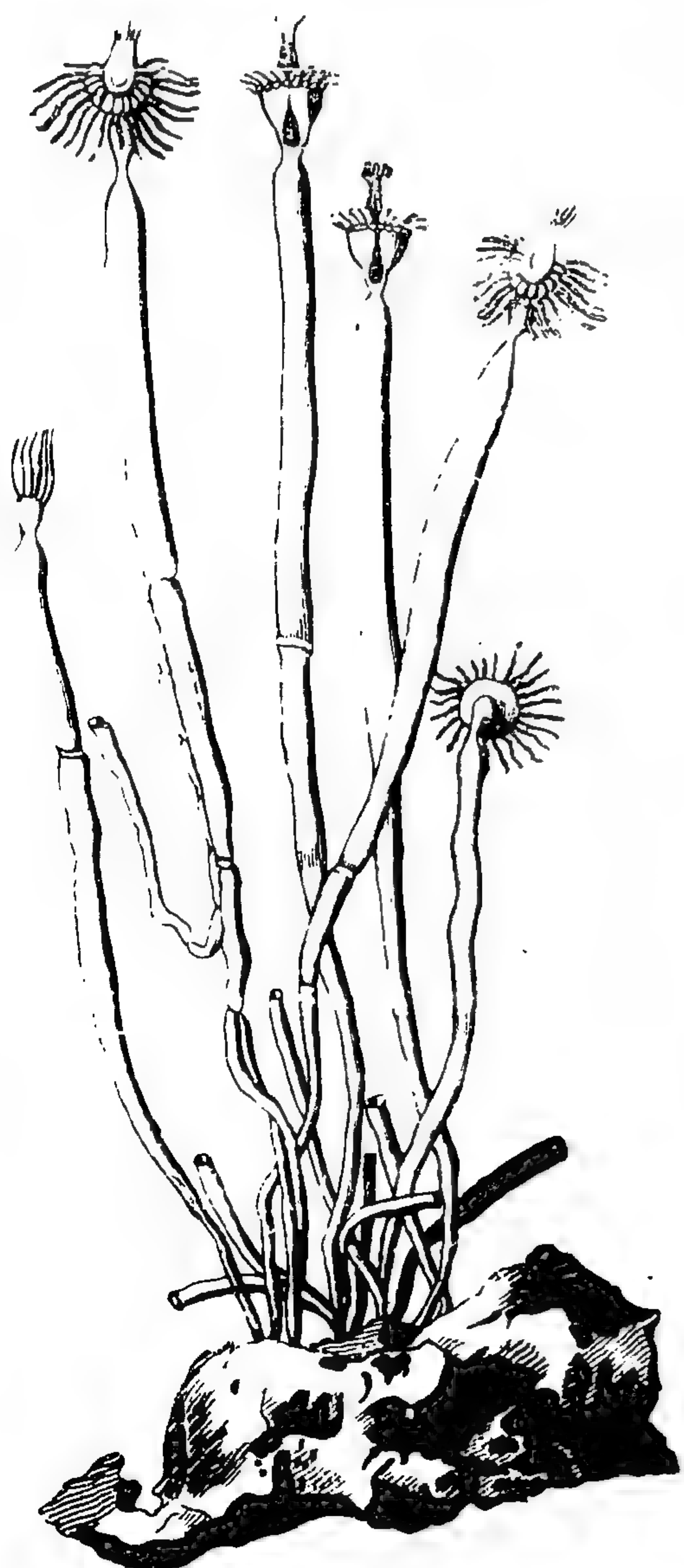


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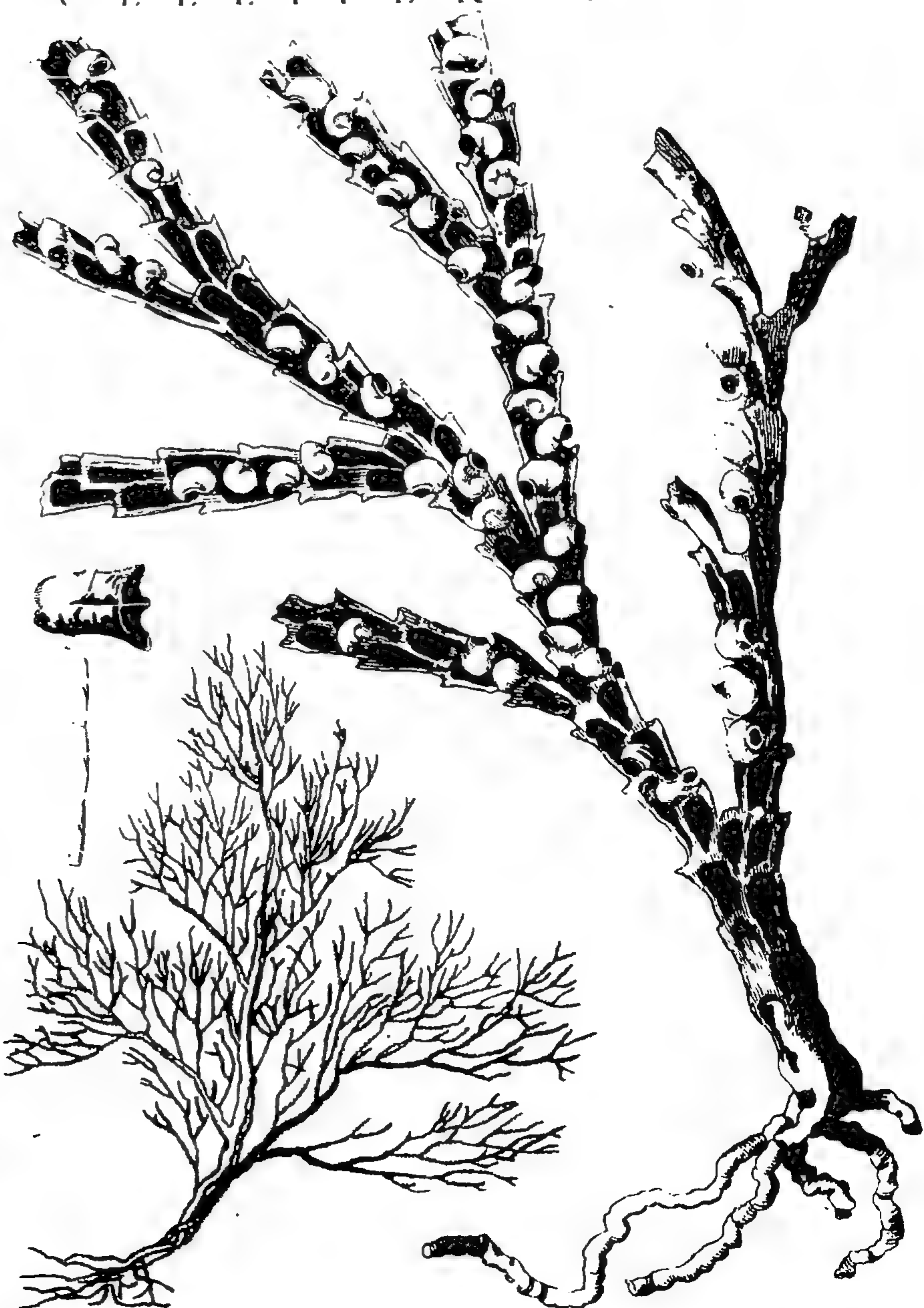
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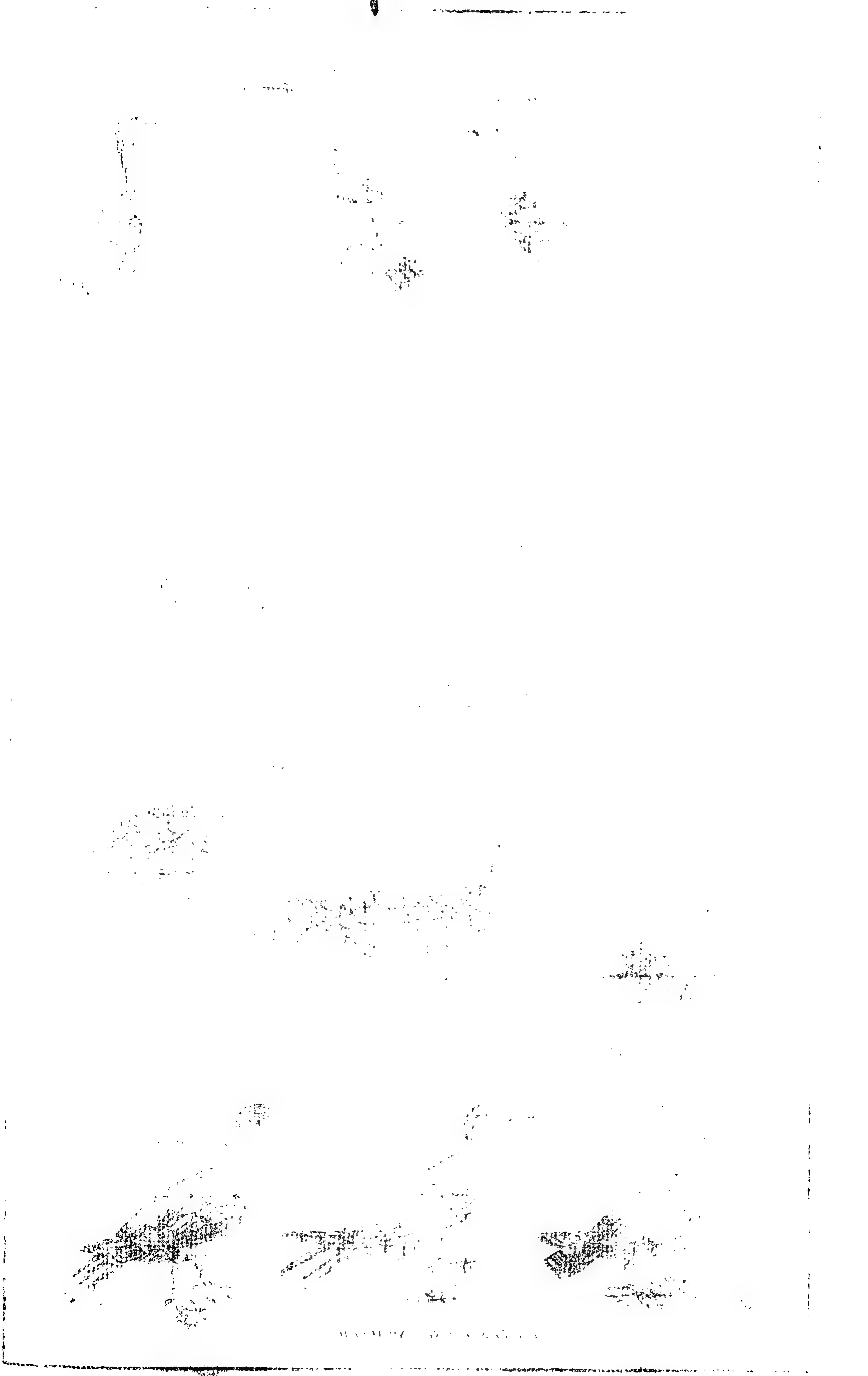
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# B I R D S



*The DOBCHICK*



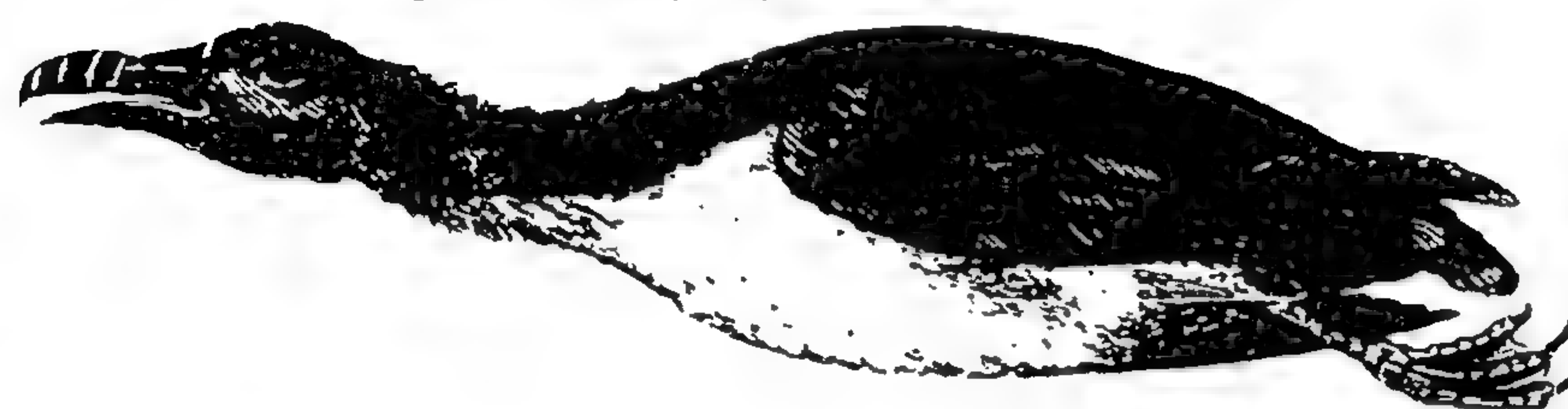
*The GODWIT*



*The GREATEST LOON*



*The GREAT DIDAPPER*



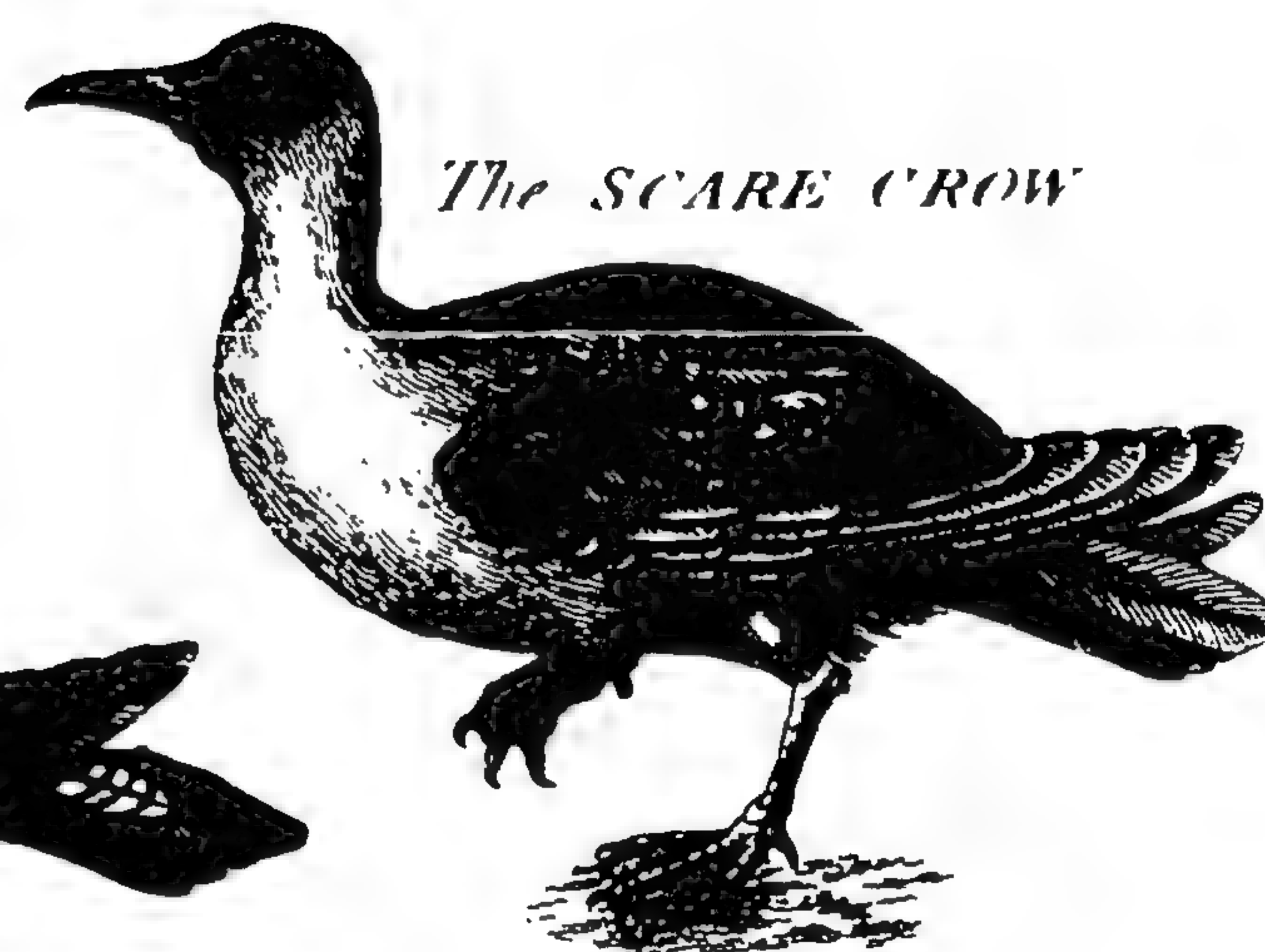
*The RAZOR BILL*



*The SEA TURTLE*

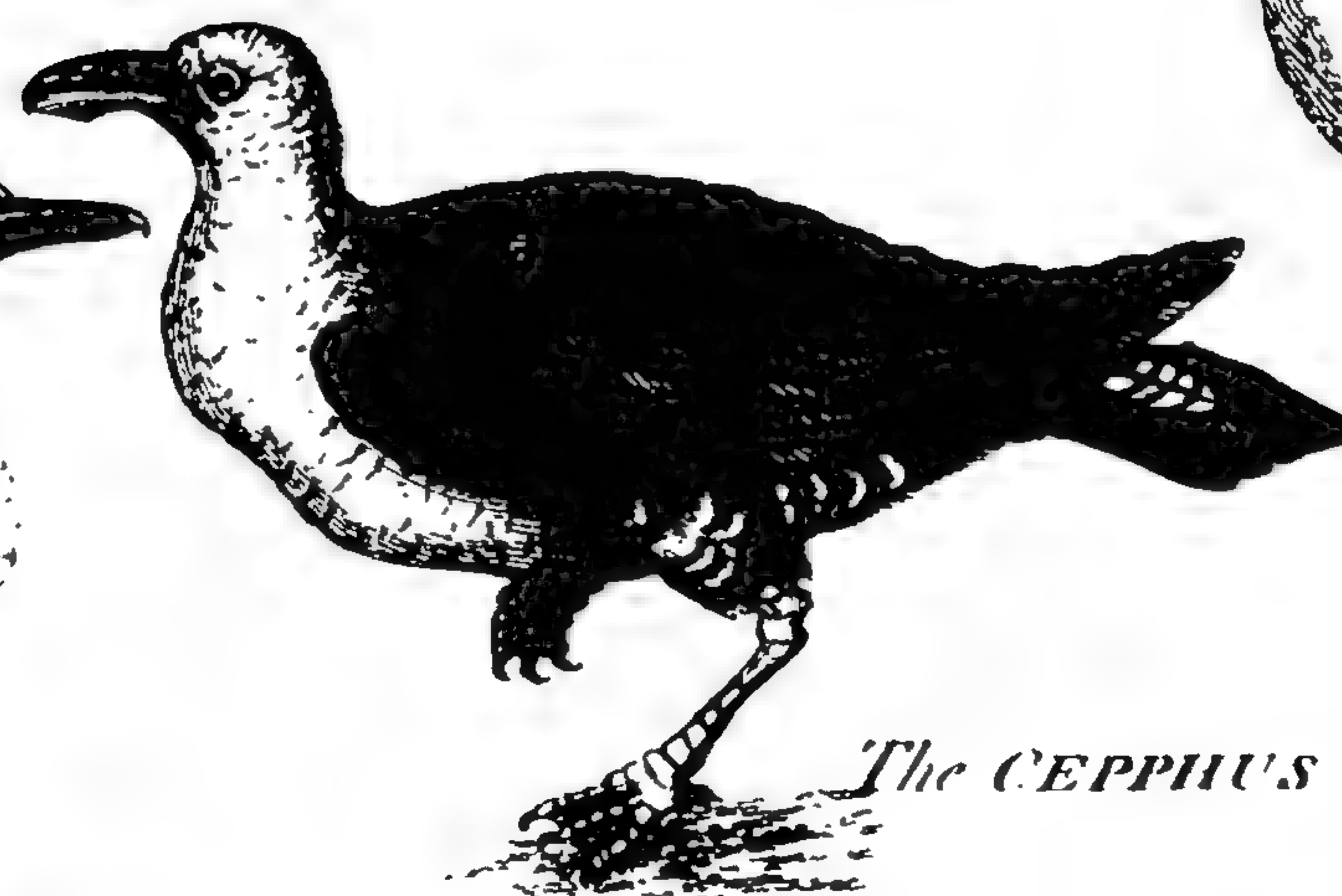


*The GUILLEMOT*



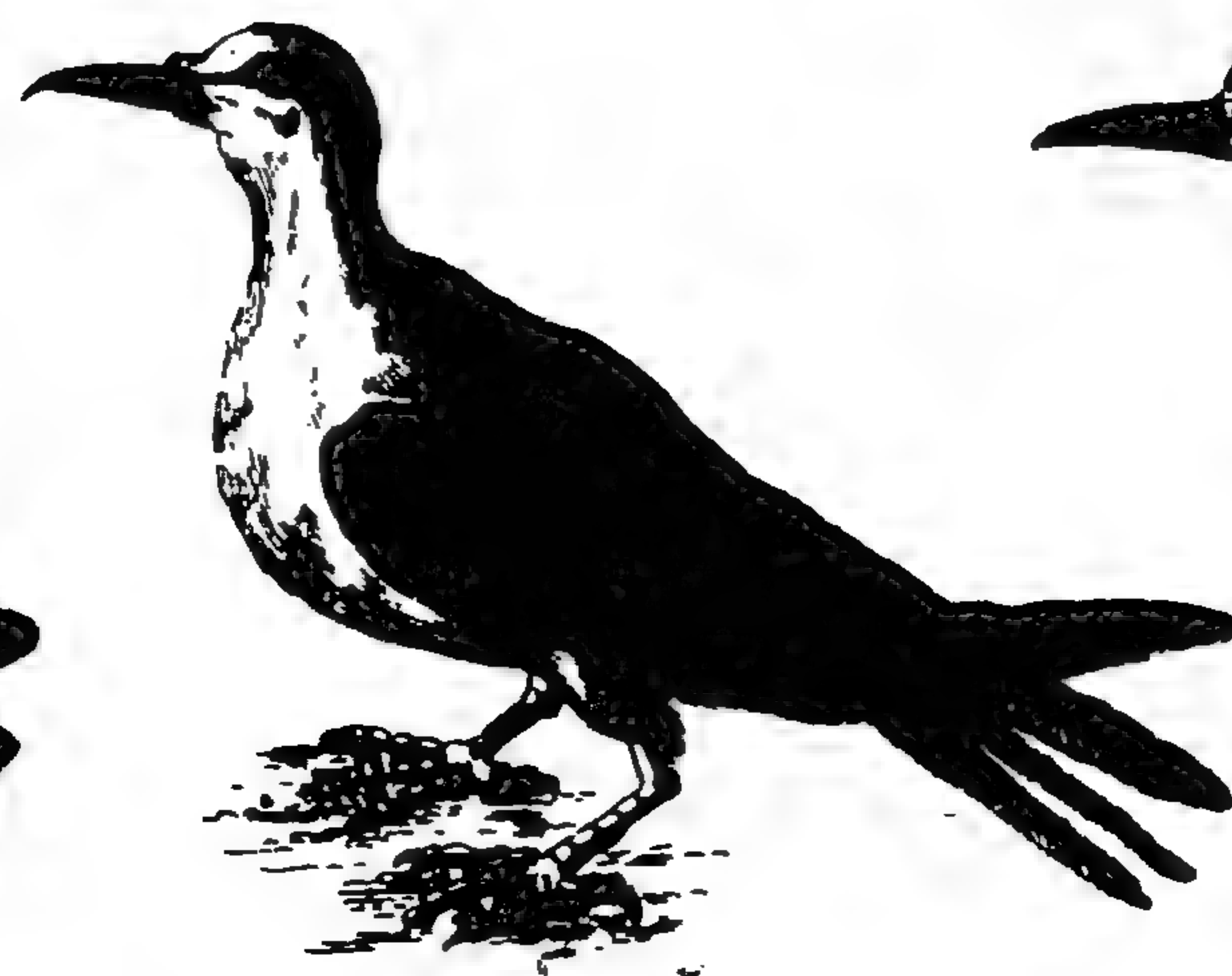
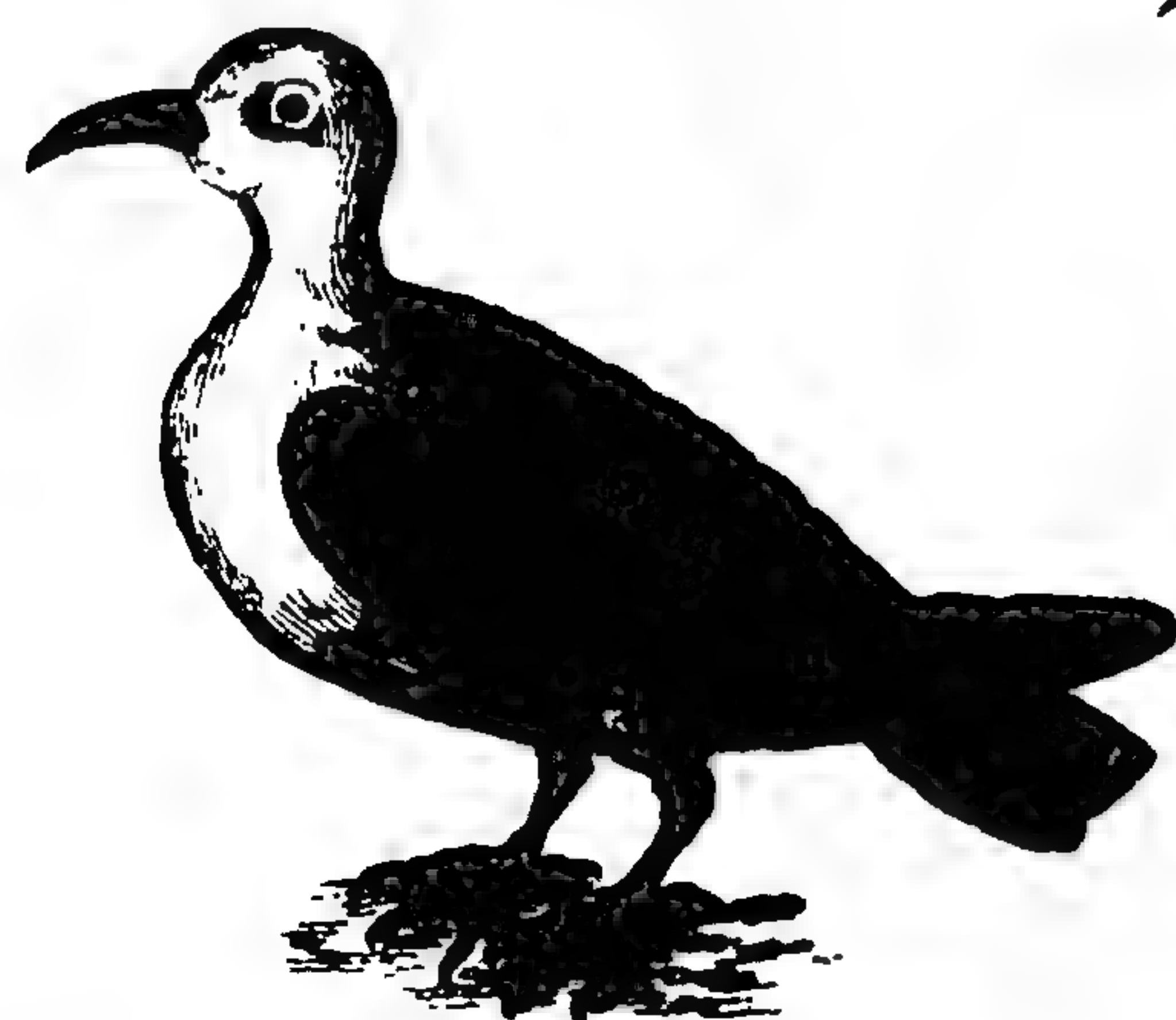
*The SCARE CROW*

*The GREAT GREY GULL*

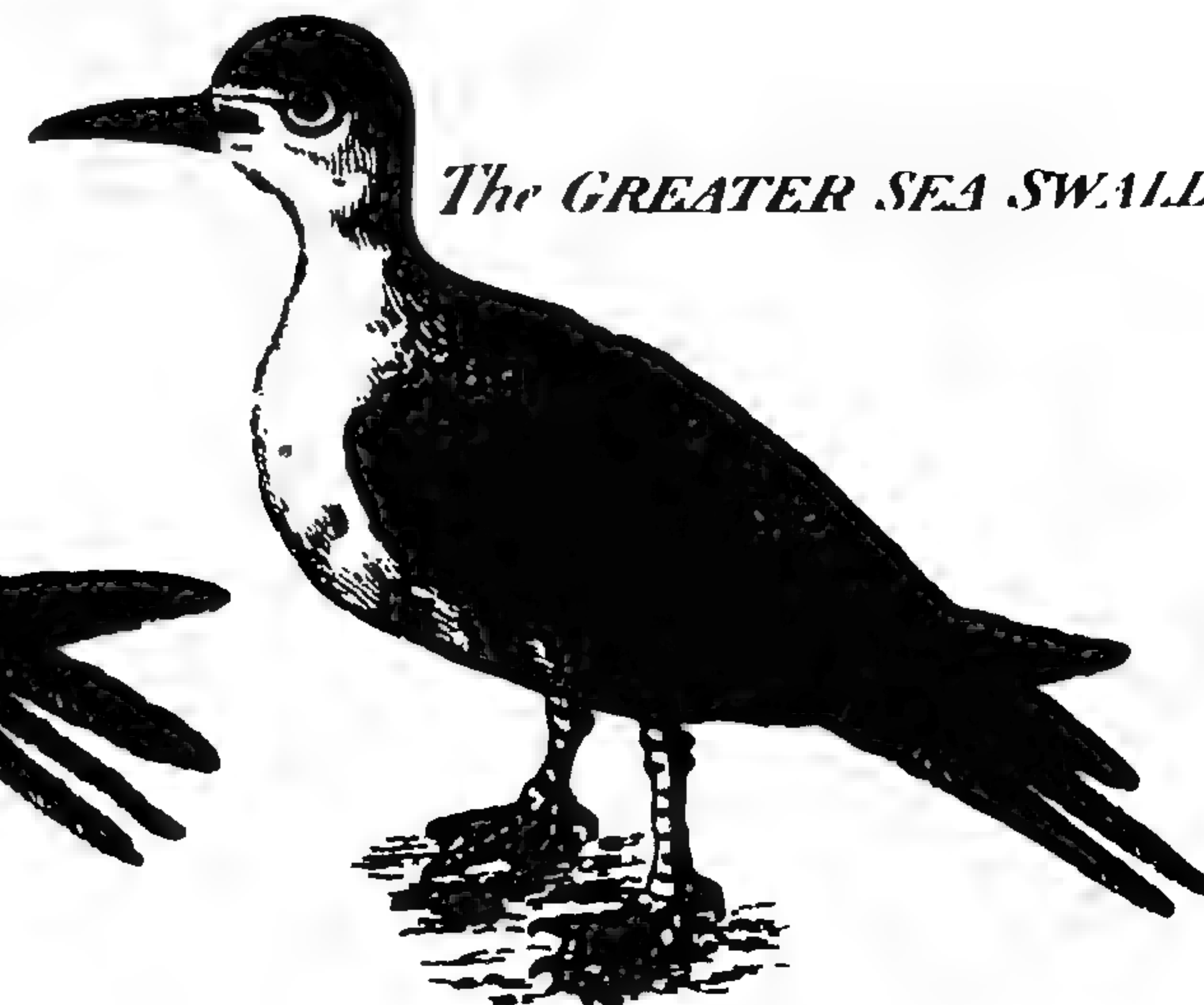


*The CEPPIUS*

*The BLACKISH GREY GULL*



*The LESSER SEA SWALLOW*



*The GREATER SEA SWALLOW*



they attempt to move swiftly. Even the smaller kinds seldom fly by choice; they laboriously flutter their wings without making much progress, and, though they have but a small weight of body to sustain, they are unwilling to quit the water, which affords them both food and protection.

The legs of this whole tribe are still more awkwardly adapted for walking. All above the knee seems hid within the belly, and nothing appears but two short legs, as if they were stuck under the rump, and upon which the animal is very indifferently supported. Their short legs drive the body in progression from side to side; and, without the assistance of the wings, they could not move much faster than a tortoise: but this awkward position of the legs, suits them admirably for a residence in water. In that element, the legs being placed behind the body, pushes it forward with greater velocity.

They are also well qualified for diving: by inclining their bodies forward, they lose their center of gravity; and every stroke from their feet only tends to sink them the faster. They can either dive at once to the bottom, or swim between two waters; where they continue in pursuit of their prey for some minutes, and then ascending to catch breath, plunge in again to renew their operations. Hence it is that birds of the Penguin kind, which are so defenceless, and so easily taken by land are impregnable by water. When they are pursued, they immediately sink, and shew nothing more than their bills, till the enemy is withdrawn.

They never visit land, except when they come to breed: that part of them which is continually in the water is white, but the back and wings are of different colours, according to the different species. They have a warmer covering of feathers than any other bird; so that the sea appears to be their natural element; and were it not for the necessary duties of propagating the species, we should have no opportunity of seeing them, and should be utterly unacquainted with them.

#### The MAGELLANIC PENGUIN.

The Magellanic Penguin is the largest and most remarkable of the kind: it is not much inferior in size to the tame goose. It cannot fly, its wings being very short, covered with stiff hard feathers, always expanded and hanging uselessly down at the sides of the bird. The upper part of the head, the back, and the rump are covered with stiff black feathers; but the belly and back are of a snowy whiteness, except a line of black which crosses the crop: that half of the bill, which is towards the base, is black and covered with wrinkles, but is marked crosswise with a stripe of yellow.

These birds walk erect with their heads on high, their fin-like wings hanging down like arms. Fish is their only food, and they seldom come ashore but in the breeding season: they dive with great rapidity, and are extremely voracious. In consequence of this gluttonous appetite, their flesh is rank and fishy: though our sailors admit it to be tolerable good eating.

They are birds of society, and, when they come on shore, are seen drawn up in rank and file, upon the ledge of a rock, standing together with the albatross, as if in consultation. This is previous to their laying, which in that part of the world usually begins in the month of November; a small depression in the earth, without any materials, constitutes their nest. The progress of incubation is carried on very rapidly by the heat of their bodies and the warmth of their feathers.

The manner of this bird's nestling is different in other countries: in some places, instead of being satisfied with a superficial depression in the ground, it burrows two or three yards deep; in

others it forsakes the level to clamber up the ledge of the rock, where it lays its single egg and hatches. Sometimes three or four take possession of one hole, and hatch their young together, in the holes of the rocks, where nature has made them a retreat. Linnæus assures us that several of this tribe are seen together. There the female lays her egg (for she never lays more than one) in a common nest; while one is placed as a sentinel to give warning of approaching danger. The egg of this Penguin is very large for the size of the bird, and generally exceeds that of a goose in magnitude. But as there are many varieties of the Penguin, and as they differ in size, from that of a Muscovy duck to a swan, the size of their eggs are proportionally different.

The black-footed Penguin, mentioned by Edwards, has four toes, and its wings are destitute of quill feathers.

#### The AUK, the PUFFIN, and other BIRDS of the PENGUIN Kind.

There is a numerous tribe of birds of nearly the same form, manners, and appetites as the Penguin, though far inferior in size. They live upon the water, in which they are continually seen diving; and seldom venture upon land, except for the purpose of breeding.

The Great Northern Diver is the first of this smaller tribe, and is nearly of the size of a goose. It differs from the penguin, in being much slenderer and more elegantly formed, and is all over beautifully variegated with stripes.

The Grey Speckled Diver is not larger than the Muscovy duck, and resembles the great northern diver in every particular except size.

The Auk, which breeds on the island of St. Kilda, chiefly differs from the penguin in size and colour. It is not so large as a duck; and the whole of the breast and belly is white.

The Guillemot is nearly of the same size as the auk, but has a longer, a slenderer, and a straighter bill.

The bill of the Puffin is different from that of any other bird: it is flat, with its edge upwards, of a triangular figure, and ending in a sharp point: the upper part is bent a little downward, where it is joined to the head; and the base is encircled with a certain callous substance, like that of parrots. It is ash-coloured near the base, and red towards the point. The eyes, which are grey, are surrounded with a protuberant skin of a vivid colour. The legs of this bird are formed like those of the rest of the tribe; it is therefore with difficulty that it rises, and it frequently falls before it gets upon the wing; but as it is a small bird (not exceeding a pigeon in size) when it once rises, it can continue its flight with great facility.

These and all the smaller birds of the Penguin kind, make no kind of nest, but lay their eggs either in the crevices of rocks, or in holes under ground near the shore. The latter situation is generally made choice of, because the auk, the puffin, the guillemot, and many others, cannot easily rise to the nest when it is in a lofty situation. Sometimes indeed by rendering them inaccessible to mankind, they make them almost inaccessible to themselves; and are frequently seen making several efforts before they can arrive at the place of incubation. On this account the auk and guillemot, when they have once laid their egg, seldom forsake it till it is excluded. During this period the male, which is better furnished for flight, feeds the female: and the place where she sits is so bare, that, were not the egg supported by the body of the bird, it would frequently roll down from the rock.

These birds are absent all the winter, visiting regions



gions too remote for discovery. A few of them, which come as spies, are seen about the latter end of March, which, after staying two or three days, depart, and return again in the beginning of May, with the whole army of their companions. But if the season happens to be stormy and tempestuous, they are found in vast quantities cast away upon the shores, lean and perished with famine. It is imagined, therefore, that this voyage is performed more on the water than in the air; and, as they cannot seize their prey in stormy weather, their strength is exhausted before they arrive at their destined port.

Near the isle of Anglesea in an islet, called Prief-holm, their flocks are so large as to be compared to swarms of bees. In another islet, called the Calf of Man, birds of this kind, though of a different species, are seen in great abundance. Numbers of rabbits breed in both these places; and the puffin, not choosing to be at the trouble of making a hole, when there is one already made, dispossesses the rabbit, and probably destroys the young. In these unjustly acquired retreats, the young pullins are found in great abundance, and become a valuable acquisition to the natives of the place. Though their flesh is very rank, yet, when pickled and preserved with spices, they are admired by those who are fond of high eating.

This whole tribe is seen to take leave of their summer residence in August. The coldest countries seem to be their most favourite retreats; and the number of water-fowl is much greater in those colder climates, than in the warmer regions near the line.

#### NATURAL HISTORY of the WILD SWAN.

**T**HESSE birds frequent our coasts in large flocks when the winters are severe; but we cannot learn that they ever breed in Great-Britain. We are informed by Martin, that they come in October in great numbers to Lingay, one of the Western isles; where they continue till March, and then retire more northward to breed. These, like most other water-fowl, prefer for that purpose those places that are least frequented by mankind: the lakes and forests of the distant Lapland are therefore filled, during summer, with myriads of water-fowl; and swans, geese, the duck tribe, divers, &c. pass that season there; but in autumn return to us, and to other more hospitable shores.

The Wild Swan is less than the tame by almost a fourth; the former weighing but sixteen pounds and three quarters, and the latter twenty pounds. The tame Swan is entirely white; but the wild bird is of an ash-colour along the back, and on the tips of the wings: the eye-lids are bare and yellow, and the legs are dusky. The cry of the Wild Swan is very loud, and may be heard at a great distance; it is therefore sometimes called the hooper.

#### The TAME SWAN.

The Swan was considered as a high delicacy among the ancients, and the goose was abtained from as totally indigestible. Modern manners have inverted tastes; the goose is now become the favourite, and the Swan is seldom brought to table, except for the purposes of ostentation.

The Swan is the largest of the British birds: it is distinguished from the wild Swan by its size, which is much larger, and by the bill, which in the tame bird is red, and the tip and side black: a black callous knob projects over the base of the upper chap. In old birds, the whole plumage is white, and, in

young ones, ash coloured. The legs are dusky. The Swan lays seven or eight white eggs, which she is near two months in hatching. Its chief food is herbs growing in the water, roots and seeds growing near the margin, and insects. No bird perhaps makes so inelegant a figure out of the water, or has the command of such beautiful attitudes in that element as the Swan. Almost every celebrated poet has taken notice of it, and Milton thus describes it.

#### —The Swan with arched neck

Between her white wings mantling, proudly rows  
Her state with oary feet.

There is not a more beautiful figure in all nature: in the exhibition of its form, there are no broken or harsh lines, no constrained motions; but the roundest contours, and the easiest transitions.

It is extremely difficult to reconcile the accounts of the ancients with the experience of the moderns, concerning the vocal powers of this bird. The Tame Swan is one of the most silent of animals, and the wild one has a loud and very disagreeable note: there is not the smallest degree of melody in either, and yet it was the general opinion of antiquity that the Swan was a most melodious bird. But while Plato, Aristotle, and Diodorus Siculus believed the vocality of the Swan, Pliny and Virgil seem to doubt that received opinion. The ancients had perhaps some mythological meaning in ascribing melody to Swans; for, when Virgil speaks of them figuratively, he ascribes to them melody, or the power of music; but when he talks of them as birds, he lays aside fiction, and, like a true naturalist, gives them their real note.

The ancients held a still more singular opinion, imagining that the Swan foretold its own death: this is doubtless a poetical flight; and, as to their being supposed to sing more sweetly at the approach of death, the cause is beautifully explained by Plato, who attributes that unusual melody to the same sort of extacy that good men are sometimes said to enjoy at that awful hour, foreseeing the joys that are preparing for them on putting off mortality.

All the stages of the Swan's approach to maturity are slow, and seem expressive of its longevity. Pliny observes, that those animals which are the longest in the womb are the longest lived; the Swan is the longest in the shell of any bird we know, and it is a year in growing to its proper size. It is said a Swan will live three hundred years; and Willoughby, who cannot be accused of easy credulity, is inclined to believe the report. A goose, as he justly observes, has been known to live an hundred years; and the Swan, being a larger bird, and its flesh of a firmer texture, may be supposed to live much longer.

Swans were formerly so much esteemed in England, that by an act of Henry IV. c. 6. no one, except the king's son, was permitted to keep a Swan, unpossessed of a freehold of five marks a year. And by stat. 2. Henry VII. the punishment for taking their eggs, was imprisonment for a year and a day, and a fine at the king's pleasure. At present they are less valued for the delicacy of their flesh, but great numbers of them are still preserved for their beauty. They are in great abundance on the Thames and the Trent, and particularly on the salt water inlet of the sea, near Abbotsbury, in Dorsetshire.

By the ancients the Swan was consecrated to Apollo and the muses. It was also consecrated to Venus, probably on account of its extreme whiteness: the car of that goddess is sometimes drawn by Swans.



## NATURAL HISTORY of the GOOSE.

**T**HE Goose, in its wild state, always retains the same marks: the whole upper part is ash coloured; the breast and belly are of a dirty white; the quill feathers and the tail are dusky, the latter being edged with white; the bill is narrow, black at the base and tip, and red in the middle; the legs are of a saffron colour, and the claws are black. In its domestic state the goose, as well as other animals, vary almost infinitely in their colours.

The wild Goose is supposed to breed in the retired parts of the north of Europe; and, at the approach of winter, to descend into more temperate regions. These birds are often seen in flocks from fifty to an hundred, flying at very great heights, and preserving great regularity in their motion; sometimes forming a strait line; at other times assuming the shape of a wedge, which facilitates their progress. Their cry is frequently heard when they are at an imperceptible distance above us. It is probable that this is a note of mutual encouragement, as they seldom exert it when they alight in those journeys. When they descend to the ground, they range themselves in a line, like cranes; and seem rather to have come down for rest, than for any other refreshment. When they have continued in this situation for an hour or two, one of them has been heard to sound a kind of charge, with a loud note, which has been punctually attended to by the others, and they have immediately pursued their journey with renewed alacrity.

The wild Goose, and many other varieties, agree in one common character of feeding upon vegetables, and being remarkable for their fecundity; but the tame Goose is the most fruitful of the kind. Having very few enemies, it leads a safer and more plentiful life, and its prolific powers increase in proportion to its ease: it is frequently known to lay upwards of twenty eggs, but the wild Goose seldom exceeds eight. The tame female is very assiduous in hatching her eggs, during which time she receives two or three visits in the day from the gander; who sometimes drives her from the nest to take her place, which he fills with great state and composure.

When the young are excluded, the pride of the gander is inconceivable: considering himself as a champion to defend his young, and to keep off even the suspicion of danger, he pursues dogs and men that never attempt to molest him; and when he has attempted to attack a mastiff, or any other animal, to whose contempt alone he is indebted for his safety, he returns in triumph to his female and her brood, screaming and clapping his wings, as if conscious of having obtained a victory.

The flesh of a young Goose is certainly very good eating; but the value of this bird is greatly increased by its feathers. Not to mention the quills, which are so easily converted into pens, and thereby become essentially useful to the scholar, the lawyer, and the trader, the feathers are highly valuable in another capacity, as the warmest and softest beds are made of them.

Most of our beds in Europe are composed of goose-feathers; though the use of them is utterly unknown in the countries bordering upon the Levant, and in all Asia. They have mattresses, stuffed with wool, camel's-hair, or cotton; the warmth of their climate rendering a softer bed unnecessary. It is however surprizing, that feather beds were not in use among the ancients: Pliny indeed informs us, that they made bolsters of feathers to lay their heads on; but this is an additional proof that they were not used for the body to repose on.

Vast quantities of tame Geese are kept in the fens in Lincolnshire, which are plucked about the neck,

breast, and back once, if not twice a year. These feathers are a considerable article of commerce; but those of Somersetshire are most esteemed by the trade; as those of Ireland are reckoned the worst. Hudson's Bay furnishes very fine feathers, supposed to be of the Goose kind. The down of the swan is imported from Dantzick, from whence we also receive a great quantity of the feathers of the cock and the hen.

Eider down is brought from Denmark; the ducks which furnish it being inhabitants of Hudson's-Bay, Greenland, Iceland, and Norway.

Feathers are cured by laying them in a room in an open exposure to the sun, and, when dried, putting them in bags, and beating them well with poles to get the dirt off. Nothing, however, but time, will prevent the smell which arises from the perspiration of the oil contained in every feather: laying upon them is the only remedy; old feathers are therefore much more valuable than new.

Geese are very profitable to the farmer for their flesh, their feathers, and their grease. They will live upon commons or any sort of pastures, and need very little care or attendance, only they should have plenty of water. The largest Geese are reckoned the best; but there is a sort of Spanish Geese that is a much better layer and breeder than the English, especially if the eggs are hatched under an English Goose.

Geese should lay in the spring, the earlier the better; because of their price, and their having a second brood. They usually lay twelve or sixteen eggs. You may know when they will lay, by their carrying straw in their mouth; and when they will sit, by their continuing on their nests after they have laid. A Goose sits thirty days; but if the weather be fair and warm, they will hatch three or four days sooner. After the goslings are excluded, some keep them in the house ten or twelve days, and feed them with curds, barley-meal, bran, &c. and when they have acquired some strength, let them out four or five hours a day, taking them in again, till they are large enough to defend themselves from vermin. Others put them out at first, and perhaps succeed as well as the former. One gander is sufficient for five Geese.

If you would fat green Geese, you must shut them up when they are about a month old, and they will be fat in about a month more. Be sure to let them have always by them, in a small rack, some fine hay, which will greatly hasten their fattening. But for fattening of older Geese, it is commonly done when they are about six months old, in or soon after harvest, when they have been in stubble fields, from which food some kill them. But those who are desirous of having them very fat, should shut them up for a fortnight or three weeks, and feed them with oats, split beans, barley-meal, or ground malt mixed with milk; but the best thing to fatten them with is malt mixed with beer. You must however observe in fattening all sorts of water-fowl, that they usually sit with their bills upon their rumps, where they suck out the greatest part of their moisture and fatness, at a small bunch of feathers; which you will find standing upright on their rumps, and always moist, with which they trim their feathers, which renders them more oily and slippery than the feathers of other fowls, and causes the water to slip off them. If therefore these upright feathers are cut away close, they will become fat in less time, and with less meat than otherwise. Geese will likewise feed on, and fatten well with carrots cut small and given them; or if you give them rye before, or about Midsummer, it will strengthen them, and keep them in health, that being commonly their sickly time.



### The WHITE-FOOTED WILD GOOSE.

This bird is frequently seen in winter in the marshes of Cheshire, and in all the northern world as far as Hudson's-Bay. It is twenty-eight inches in length, and four feet and a half in breadth, and weighs about five pounds: the bill is much thicker and larger than that of the common wild goose, and is of a reddish yellow: the forehead white, the head brown, and the upper part of the breast of a light ash colour, clouded with a deeper. The belly is white, spotted with black; the coverts of the wings are grey, edged with brown. The tail is black, edged with white: the legs are orange colour, and the claws of a pale flesh colour.

### The BARNACLE.

The length of this bird is about two feet and one inch; the breadth four feet five inches, and the weight about five pounds; the bill is black and not quite two inches long: the head is small, and the forehead and cheeks white; and a black line extends from the bill to the eyes: the neck, the hind-part of the head, and the upper-part of the breast and back are of a deep black: the belly and the coverts of the tail are white; the back, scapulars, and coverts of the wings, are beautifully barred with grey, black, and white: the tail and legs are black.

During winter, these birds appear in vast flocks, on the north-west coasts of this kingdom. They are naturally very wild and shy, but, when taken, grow as familiar as our tame geese in a very few days. They quit our shores in February, and go to breed in Lapland, Greenland, and Spitzbergen. A ridiculous error has been propagated of this bird's being bred from a shell that is often found sticking at the bottoms of ships: but it is now well known to be hatched from an egg in the ordinary manner, and to differ in very few particulars from all the rest of its kind.

### The BRENT GOOSE.

This is smaller than the barnacle; its bill is black, and one inch and an half long. The head, neck, and upper-part of the breast are black; but about the middle of the neck, on each side, is a spot of white: the lower-part of the breast, the scapulars, and the coverts of the wings are ash-coloured, clouded with a deeper shade; the tail, the quill feathers, and the legs are black. These birds are common on our coasts in winter. In Ireland they are called Barnacles, and appear in great numbers in August, leaving it in March. Their principal food is a kind of long grass growing in the water: they prefer the root and that part next above it, which they dive for, bite off, and leave the upper-part to drive on shore. Near London-Derry, Belfast, and Wexford, they are extremely numerous, and are taken in the night-time in nets placed across the rivers. They are much esteemed for their delicacy; Linnæus erroneously mentions the Barnacle and the Brent as synonymous, and describes the true Barnacle as the female of the white-fronted wild goose; but Mr. Willoughby, Mr. Ray, and Mr. Brisson very properly describe them as different species.

### The CANADA GOOSE.

The shape of this bird is like that of our common tame goose, but a little longer; the back is of a brownish ash-colour, and the rump black: the lowest part of the tail is whitish, and the remaining feathers black: the lesser and covert feathers are of a brownish ash-colour, and the feet are black.

### The BLUE-WINGED GOOSE of NORTH-AMERICA.

This is smaller than the common tame goose, and has a red bill. The head, and greatest part of the neck is white. The back, the breast, and lower part of the neck, are of a dark brown. The tail is of a brownish ash colour, and the belly and thighs are white. The legs are bare of feathers just above the knee, and the three forward toes are webbed. The legs and feet are red, and the toes are black, that which is backwards being very small. This is a native of Hudson's-Bay.

### The MUSCOVY GOOSE.

This is a curious large fowl, and is three feet in length from the tip of the bill to the end of the tail; and, when the wings are extended, near five feet in breadth. It weighs about fourteen pounds: the bill is of an orange colour, with a large tubercle or knob of the same colour on the base of the upper-jaw. The pupil of the eye is black, with a fine gold coloured iris, and a large bag hangs beneath the bill. The top of the head and the sides of the neck are of a dark brown: the upper-part of the back is of the same colour, except that the outer edges of the feathers are of a lighter colour. The wings and the rest of the body are white, except a few dark feathers on the upper-part of the tail: the legs and feet are of a fine orange colour, and the claws are black. This is the description of the male, which the female greatly resembles, except that the knob is not so large.

The mountain Goose of the Cape of Good Hope is larger than any of the European kind: the feathers on the top of the head and the wings are of a very beautiful shining green. It frequently comes into the valleys, where it feeds on grass and herbs.

The Water-Goose of the Cape of Good Hope is like the common goose with respect to colour, but has a brownish stripe, mixed with green on the back. The flesh of both of these is said to be very good.

### NATURAL HISTORY of the TAME DUCK.

**T**HIS is the most easily reared of any of our domestic animals. The very instincts of the young ones direct them to their favourite element; and, though they are hatched and conducted by the hen, they despise the admonitions of their leader. All birds have their manners rather from nature than education; and those of the duck kind, in particular, follow their appetites, not their tutor, and attain their various perfections without a guide. The arts of man indeed are the result of accumulated experience, those of inferior animals are in general self-taught, and not acquired by imitation.

It is customary to lay Duck eggs under a hen, because she hatches them better than the parent would have done. The Duck is a careless inattentive mother, frequently leaving her eggs till they spoil, and seeming almost to forget that she is entrusted with the charge: she shews but very little more attention to the young, when they are produced: she leads them to the pond, and supposes she has sufficiently provided for her offspring when she has shewn them the water. The hen, on the contrary, is a most indefatigable nurse; she broods with the utmost assiduity, and usually brings forth a young one for every egg committed to her charge. She does not indeed lead them to the water, but she carefully guards them when they are there, by standing on the brink. She can afford them protection, if the weasel or the rat attempt to seize them: when

weary



weary of paddling, she conducts them to the house, and rears the supposititious brood, without suspecting that they are not her own.

Of the Tame Duck there are not less than ten different varieties, and Brisson reckons upwards of twenty of the wild. The most obvious distinction, however, between wild and tame Ducks is in the colour of their feet; those of the tame Duck being black, and those of the wild Duck yellow.

The common tame species of Ducks take their origin from the mallard, and may be traced to it by unerring characters. The drakes, however they vary in colours, always retain the curled feathers of the tail; and both sexes the form of the bill of the wild kind.

Nature, for a wise and useful end, sports in the colours of all domestic animals, that mankind may the more readily distinguish and claim their respective property.

The mallard is usually about twenty-three inches in length, thirty-five inches in breadth, and weighs about two pounds and an half: the bill is greenish inclining to yellow; and the head and neck are of a deep shining green. Almost a circle of white extends round the lower part of the neck; but the circle wants about a fourth of being complete. The upper part of the breast is of a purplish red, and the beginning of the back is of the same colour: the breast and belly are grey, marked with transverse speckled lines of a dusky hue. The scapulars are white, elegantly barred with brown. The spot on the wing is of a rich purple; and the tail consists of twenty-four feathers. The male of this species is distinguished by four middle feathers, which are black and strongly curled upwards; but the females have not this mark. Their plumage is of a pale reddish brown, spotted with black; and the legs are of a saffron colour.

"Ducks," says Mr. Mortimer, in his Husbandry, "require no charge in keeping, for they live on lost corn, snails, &c. for which reason they are very proper for gardens. Once in the year they lay a great number of eggs, especially a sort of Duck which turns up its bill more than the common kind. When they sit they require no attendance, except they have a little barley or offal corn near them, that they may not straggle far from their nests to chill their eggs. They are reckoned to be better hatched under a hen than a Duck; because while they are young, the hen will not lead them so often into the water. Some think it very proper to cut off the feathers from their rumps; because, when their tails are wet, it often occasions their drowning. As to the fattening of them, it may be done in three weeks time, by giving them any kind of corn or grain, and plenty of water. Ground malt, wet either with milk or water, is best."

#### The EIDER DUCK.

This useful species is found in the western isles of Scotland; but in great abundance in Norway, Iceland, and Greenland; from whence is imported a vast quantity of the down, known by the name of Eider, which is furnished by these birds. Its remarkably light, elastic, and warm qualities, make it highly esteemed as a stuffing for coverlets, by such whom infirmities render unable to support the weight of common blankets.

This bird, which resides in the colder climates, as we have already observed, lays from six to eight eggs, making her nest among the rocks or plants on the sea shore. There is nothing very singular in the external materials of the nest; but the inside lining, on which the eggs are deposited, is the warmest, softest, and lightest substance that can be imagined. This is no other than the down produced from the breast of the bird in the breeding

season, which the female plucks off with her bill, and furnishes her nest with a more valuable lining than the most skilful artists can produce. The natives are industrious in finding out the nest, and after suffering the bird to lay, rob her of both the eggs and the nest. Not discouraged by the first disappointment, the Duck builds and lays a second time in the same nest. The second mansion, with its valuable furniture, is also taken away by the natives. She ventures, however, to build a third time, but the down for the lining of this nest is supplied from the breast of the drake. If this is stolen from them, they both forsake the place and breed there no more. This down is separated from the dust and moss by the natives; and, though they require a warm covering themselves, their necessities oblige them to exchange it for brandy and tobacco, with the more indolent and luxurious inhabitants of the south.

#### The WILD DUCK.

The difference between wild Ducks, arises principally from their size, and the nature of the place they feed in. Sea-Ducks, which frequent the salt-water, and often dive, have a broad bill pointing upwards, a large hind-toe, and a long blunt tail. Pond-Ducks have a straight and narrow bill, a small hind-toe, and a sharp-pointed train. Our decoy-men give the former the appellation of foreign Ducks; the latter are supposed to be natives of England.

All the varieties of wild Ducks live in the manner of our domestic Ducks, keeping together in flocks in the winter, and flying in pairs in summer, rearing their young by the water side, and leading them to their food as soon as they escape the shell. They usually build their nests among heath or rushes, at no great distance from the water; and lay twelve, fourteen, or more eggs before they sit. But, though this is their general method, their dangerous situation on the ground sometimes obliges them to change their manner of living; and their awkward nests are frequently seen exalted on the tops of trees. This must be attended with great difficulty, as the bill of a Duck is but ill-formed for building a nest, or furnishing it with such materials as to give it sufficient stability to stand the weather. The nest thus elevated generally consists of long grass, mixed with heath, and lined with the bird's own feathers. But, in proportion as the climate is colder, the nest is more artificially made, and has a warmer lining. In the Arctic regions, all the birds of this kind take incredible pains to protect their eggs from the severity of the weather. The gull and the penguin tribe seems to disregard the most intense cold in those regions, but the Duck forms itself a hole to lay in, shelters the approach, lines it with a layer of grass and clay, another of moss within that, and then a warm coat of down or feathers.

As these birds possess the faculties of flying and swimming, they are principally birds of passage, and probably perform their journeys across the ocean as well on the water as in the air. Those which visit this country on the approach of winter, are neither so fat nor so well tasted as those that remain with us the whole year: their flesh is often lean, and generally fishy. This flavour it has perhaps contracted in the journey; their food in the lakes of Lapland, from whence they descend, being generally of the insect kind.

When they arrive among us, they fly about in flocks in search of a proper residence for the winter. In the choice of this they have two objects in view; to be near their food, though remote from interruption. They prefer a lake in the neighbourhood of a marsh, where there is also a cover of woods, and where insects are the most plentiful. Lakes which

have



have a marsh on one side, and a wood on the other, generally abound with wild fowl.

Wild Ducks, when flying in the air, are often lured down from their heights by the loud voice of the mallard from below: all the stragglers attend to this call; and, in the course of ten or fifteen days, a lake that was quite naked before, becomes black with water fowl; having deserted their Lapland retreats, to visit these Ducks which reside continually among us.

They usually make choice of that part of the lake, where they are inaccessible to the approach of the fowler, in which they all appear huddled together, and are extremely loud and busy. Where they sit and cabal thus, there is no food for them, as they generally chuse the middle of the lake, and what can employ them all the day it is not easy to conjecture. They frequently go off privately by night to feed in the adjacent meadows and ditches, which they are afraid to approach by day. In these nocturnal adventures they are often taken; for though timorous, they are easily deceived, and many of them are caught in springes. The greatest quantities, however, are taken in decoys, which are well known in the neighbourhood of London, though very little used in the remoter parts of the country.

The general season for catching fowl in decoys, is from the latter end of October to the beginning of February. By an act of George the Second, a penalty of five shillings is incurred for every bird destroyed at any other season.

The decoys in Lincolnshire are usually let at a certain annual rent, from five pounds to thirty pounds a year. By these the markets of London are principally supplied with wild fowl. Upwards of thirty thousand of ducks, wigeon, and teal, have been sent up in one season, from ten decoys in the neighbourhood of Wainfleet.

#### The VELVET DUCK.

The male of this species is larger than the tame Duck. The bill is broad and short, yellow on the sides, black in the middle, and the hook red: the head, and part of the neck is black, tinged with green: behind each ear is a white spot; and in each wing is a white feather; the rest of the plumage is of a fine black, and of the soft and delicate appearance of velvet: the legs and feet are red; the webs black: the female is entirely of a deep brown colour, the marks behind each ear and on the wings excepted: the bill is like that of the male, except that it wants the protuberance at the base.

#### The TUFTED DUCK.

This bird does not weigh above two pounds; the length is about fifteen inches and a half; the bill is of a bluish grey, except the hook, which is black. The head is adorned with a short thick pendant crest. The belly and under coverts of the wings are of a pure white; the rest of the plumage is black, varied about the head with purple; the tail is short, consisting of fourteen feathers: the legs are of a bluish grey, and the webs black. The female has no crest. When young she is of a deep brown, and the sides of the head next the bill of a pale yellow, but she preserves the other marks of the old Duck.

#### The SCAUP DUCK.

This is smaller than the common Duck. The bill broad, flat, and of a greyish blue colour: the head and neck black glossed with green: the breast is black: the back, the coverts of the wings, and the scapulars, are finely marked with numerous narrow transverse bars of black and grey: the greater quill feathers are dusky; the lesser white,

tip with black: the belly is white: the tail and feathers, both above and below are black; the thighs barred with dusky and white strokes: the legs dusky.

These birds differ infinitely in colours; so that in a flock of forty or fifty, there are not two alike.

#### The PINTAIL DUCK.

This bird is of a slender form, and has a long neck: its length is twenty-eight inches; its breadth about three feet two inches; and its weight twenty-four ounces. The bill is black in the middle, and blue on the sides: the head is of an iron colour, tinged behind the ears with purple, a white line extends from the ears a considerable way down the neck; this line is bounded by black: the hind part of the neck, the back and sides are elegantly marked with white and dusky waved lines: the fore part of the neck and belly are white; the scapulars striped with black and white; the coverts of the wings are ash coloured; the lowest tip with dull orange: the middle quill feathers barred on their outmost webs with green, black and white: the exterior feathers of the tail are ash coloured; the two middle black, and three inches longer than the others: the feet are of a lead colour. The female is of a light brown colour, spotted with black. These birds are found in great abundance in Connaught, in Ireland, in the month of February only: they are much esteemed for their delicacy.

#### The GREY-HEADED DUCK.

We are indebted to Mr. Bolton for an account of this bird, which he suspects to be the Glaucian of authors. It agrees in all respects with Belon's description of that bird, the head and neck excepted, which in that of the French ornithologist are of a reddish brown.

It is the size of a common duck; the bill large, broad, and serrated round the edges, and of a yellowish brown colour; the head large and round; the irides of the colour of gold; the head and upper part of the neck are of a deep grey; at the extremity of the grey passes a collar of white, half an inch broad, surrounding the neck. The breast is of a silvery grey: the belly quite white; the back and wings black; the latter, when expanded, shew a few white feathers; the tail is short and black; the legs are of a yellowish brown colour; the hind toe small.

#### The WHITE-BELLIED DUCK of JAMAICA.

This bird is about twenty inches long, and the breadth is thirty inches. The bill is black, near two inches long, and the holes of the nostrils are round. The tail is three inches long; and the feathers on the head are mottled with light and dark brown. The upper part of the neck, the sides under the wings, and part of the belly, are covered with brown feathers crossed with whitish lines. The back is more brown, and the tail and wings are of a light brown; but some of the shorter prime feathers are painted with green, orange, and white. The breast and part of the belly is white, and the legs and feet are of a greenish brown.

#### The BARBARY DUCK.

The Barbary Duck is of the size between a goose and a Duck, but the legs are short, and the male is larger than the female. The colour is not always the same; some being white, others black, and others of different colours; but it is generally black, variegated with other colours. The bill of this bird is short, broad, and crooked at the end; and it has a crest or red tubercle between the eyes as large as a cherry, and a red skin about the eyes, which



which has the appearance of red leather. The flesh has a taste between a goose and a duck.

#### The MADAGASCAR DUCK.

This bird is larger than the tame duck, its bill is of a yellowish brown, and the iris of the eyes of a fine red. The neck and head are of a dusky green, and the back of a deep purple mixed with blue; the edges of the feathers are red, and the breast of a deep brown, with the edges of the outer-feathers red; but the feathers on the shoulders are green, some of which have red edges. The first row of the covert feathers is of the same colour, and the second is green. The long feathers of the wings have red edges, and the legs and feet are of an orange-colour.

#### The BAHAMA DUCK.

This bird is smaller than a tame duck; the head near the upper-jaw is of a triangular shape, and of a gold colour. The inside of the bill, and the lower-part of the neck are white; the hind part of the head, the breast and belly are of a yellowish ash colour, and the wings brown; but the middle is green surrounded with yellow, and the extremities are black.

#### The GOOSANDER.

**T**HIS bird frequents our rivers, and other fresh waters, especially in severe winters; they are excellent divers, and live on fish. The length of the male is about two feet four inches; the breadth three feet two inches, and the weight four pounds. The bill is three inches long, narrow, and finely toothed; the colour of that and the irides is red. The head is large, and the feathers on the hind-part long and loose: the colour black, beautifully glossed with green; the upper-part of the neck is the same: the lower-part and the belly is of a fine pale yellow: the upper-part of the back, and the inner scapulars are black: the lower part of the back, and the tail are ash coloured: the tail consists of eighteen feathers: the greater quill feathers are black, the lesser white, and some of them are edged with black: the coverts at the setting on of the wing are black, the rest white; and the legs are of a deep orange colour.

The female, which is sometimes called the Dunder-Diver, is less than the male: the head, and the upper-part of the neck are of an iron colour; the throat white: the feathers on the hind-part are long, and form a pendent crest: the back, the coverts of the wings, and the tail are of a deeper ash colour; the greater quill feathers are black, the lesser white: the breast and belly are white, tinged with yellow.

#### NATURAL HISTORY of the SCOTER.

**T**HE Scoter weighs two pounds nine ounces: the length is twenty-two inches; and the breadth thirty-four inches: the middle of the bill is of a fine yellow, the rest is black: both male and female want the hook at the end; but on the base of the bill of the former is a large knob, divided by a fissure in the middle. The tail consists of sixteen sharp-pointed feathers, of which the middle are the longest. The colour of the whole plumage is black; that of the head and neck glossed over with purple; the legs are black. This bird is allowed in the Romish church to be eaten in Lent. It is a great diver, said to live almost constantly at sea; and to be taken in nets placed under water.

No. 23.

#### NATURAL HISTORY of the GOLDEN EYE.

**T**HE length of this species is nineteen inches; the breadth thirty-one inches, and the weight about two pounds. The bill is black, short, and broad at the base: the head, which is large, is of a deep black, glossed with green: at each corner of the mouth is a large white spot. The irides are of a bright yellow: the upper-part of the neck is of the same colour with that of the head: the breast and belly are white: the scapulars are black and white: the back, tail, and the coverts on the ridge of the wings are black: the fourteen first quill-feathers, and the four last are black; the seven middlemost are white, as are the coverts immediately above them: the legs are of an orange colour. The head of the female is of a deep brown, tinged with red. the neck grey: the breast and belly are white: the coverts and scapulars dusky and ash coloured: the middle quill-feathers white; the others, together with the tail, are black; the legs dusky. These birds frequent fresh water, as well as the sea; and are found during winter on the Shropshire meres.

#### NATURAL HISTORY of the SHIELDRAKE.

**T**HE length of the male of this elegant species is two feet; the breadth three feet and a half, and the weight two pounds ten ounces. The bill is of a bright red, swelling at the base into a knob, which is most conspicuous in the Spring; the head and upper-part of the neck is of a fine blackish green; the lower-part of the neck is white; the breast, and the upper-part of the back is surrounded with a broad band of bright orange-bay; the coverts of the wings, and the middle of the back are white, the nearest scapulars black, the others white; the greater quill-feathers are black; the exterior webs of the next are a fine green, and those of the three succeeding orange; the coverts of the tail are white; the tail itself of the same colour, and except the two outermost feathers tipped with black; the belly is white, divided lengthways by a black line; the legs of a pale flesh colour.

These birds frequent the sea-coasts, and breed in rabbit-holes. If any one attempts to take their young, the old birds shew great address in diverting his attention from the brood; they fly along the ground as if they were wounded, until the young are got into a place of security, and then return and collect them together. The Shieldrake lays fifteen or sixteen eggs, which are white, and of a rounded shape. In winter they assemble in great flocks. Their flesh is very rank and disagreeable.

#### NATURAL HISTORY of the POCHARD.

**T**HE length of this bird is about nineteen inches; its breadth two feet and an half; and its weight twenty-eight ounces. The bill is of a deep lead-colour; the head and neck are of a bright bay colour; the breast, and part of the back where it joins the neck are black; the coverts of the wings, the scapulars, back, and sides under the wings are of a pale grey, elegantly marked with narrow lines of black: the quill-feathers dusky; the belly is ash coloured and brown; the tail, which consists of twelve short feathers, is of a deep grey-colour; the legs lead-coloured: the irides of a bright yellow, tinged with red. The head of the female is of a pale reddish brown; the breast is rather of a deeper colour; the covers of the wings a pale ash colour; the belly ash coloured. These birds frequent both fresh and salt water; and are very delicate eating. They are known in the London markets by the name of Duff birds.

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## NATURAL HISTORY of the WIGEON.

**T**HE length of the Wigeon is twenty inches; the breadth two feet three inches; and the weight about twenty-three ounces. The bill is lead coloured, and black at the end; the head, and upper-part of the neck is of a bright light bay; the forehead somewhat paler, and in some almost white; the plumage of the back and sides are elegantly marked with narrow, black, and white undulated lines; the breast is of a purplish hue, and is sometimes marked with round black spots; the belly is white. In some the coverts of the wings are almost wholly white; in others of a pale brown, edged with white; the greater quill-feathers are dusky; the outmost webs of the middle feathers are of a fine green, with black tips. The two middle feathers of the tail, which are longer than the others, are black and sharp-pointed; the rest are ash coloured: the legs dusky. The head of the female is of a rusty brown, spotted with black; the back is of a deep brown edged with a paler; and the belly white.

## NATURAL HISTORY of the GADWALL.

**T**HE Gadwall is rather smaller than the wigeon. The bill, which is two inches long, is black, and flat; the head, and the upper-part of the neck, are of a reddish brown, spotted with black; the lower-part, the breast, the upper-part of the back, and the scapulars, are beautifully marked with black and white lines; the belly is of a dirty white; the rump above and below is black; the tail ash coloured, edged with white; the coverts on the ridge of the wing are of a pale reddish brown; the greater quill feathers are dusky; the inner web of three of the lesser quill feathers is white; which forms a conspicuous spot; the legs are orange coloured. The breast of the female is of a reddish brown, spotted with black; and the back of the same colour; the wings, though they have the same marks, are not so bright as those of the male.

## NATURAL HISTORY of the GARGANEY.

**T**HIS bird is of a size between the wigeon and the teal. The bill is of a deep lead colour; the crown of the head is dusky, marked with oblong streaks; on the chin is a large black spot; from the corner of each eye is a long white line, pointing to the back of the neck: the cheeks, and upper-part of the neck, are of a pale purple, marked with minute oblong lines of white, pointing downwards; the breast is of a light brown, marked with semi-circular bars of black: the belly is white; the coverts of the wings are grey; but the lowest are tipped with white; the first quill feathers are ash coloured; the exterior webs of those in the middle are green; the scapulars are long and narrow, and elegantly striped with white, ash colour, and black; the tail is dusky; and the legs of a lead colour. The female has an obscure white mark over the eye; the rest of the plumage is of a brownish ash colour.

## NATURAL HISTORY of the TEAL.

**T**HE Teal weighs about twelve ounces; the length of the Teal is about fifteen inches, and the breadth twenty-eight inches. The bill is black: the head and the upper-part of the neck are of a deep bay; from the bill to the hind-part of the head extends a broad bar of glossy changeable green, bounded on the lower-side by a narrow

white line; the lower-part of the neck, the beginning of the back, and the sides under the wings, are elegantly marked with waved lines of black and white; the breast and belly are of a dirty white; the tail is sharp-pointed, and dusky; the coverts of the wings are brown; the greater quill-feathers are dusky; the exterior webs of the lesser are marked with a glossy green spot, above that another of black, and the tips white; the irides are whitish; and the legs dusky. The female is of a brownish ash colour, spotted with black; and, like the male, has a green spot on the wings.

The summer Teal, it is imagined, differs not in the species from the common kind, only in sex. Linnaeus hath placed it among the birds of his country; but does not mention its place of residence, and hath evidently copied Mr. Willoughby's imperfect description of it: and to confirm our opinion of its being the same species, a bird which was sent us from the Baltic-sea, under the title of *anas circia*, the summer Teal of Linnaeus, was no other than the female of our Teal.

## The FRENCH TEAL.

This is much smaller than a duck; it appears only in the autumn and the winter: they are all of the same colour, only the females are grey about the neck, and yellowish under the belly: the colour is brown on the back, upon the wings, and under the rump. Like ducks they have a shining spot upon each wing, and a white line underneath, which proceeds from the extremity of the wings; the twelve prime feathers are of the same colour; but the next following are white at the extremities, and make another white line; the other feathers are black above; forming a black spot on each side.

## The INDIAN TEAL.

The Indian Teal is smaller than a duck, and the upper-part of the bill is longer than the lower. The bill and feet are of a beautiful red; the top of the head, the upper-part of the neck, and almost the whole of the back, are yellow; as well as the rump, which is spotted with large spots in the shape of an half-moon. The under-part of the neck, the breast, and the belly are white; but the wings have a great variety of colours, in which the beauty of this bird principally consists; for the first feathers on the shoulders are of a faint rose colour, marked with black spots in the shape of a half-moon; those that follow them are partly white and partly green; and the longest are all adorned with a beautiful shining blue. The tail is a mixture of green and blue, and the toes are destitute of membranes.

## The CHINESE TEAL.

The Chinese Teal has a green tuft, and the feathers are of a purple colour. It is beautifully variegated, and the feathers near the rump are placed in a very singular manner.

## NATURAL HISTORY of the COOT-FOOTED TRINGA.

**T**HE bill is black, slender, and terminates in a point. The upper-chap is longer than the lower, and bent a little downwards. A blackish line runs from the nostril through the eye; but the under side of the head and throat is white. An orange coloured line runs behind each eye, and down each side of the neck, joining on the fore-part to the middle of the neck beneath the white throat. On the top of the head, the hind-part of the neck, all round the lower-part of the neck, back, and coverts of the wings, the feathers are of an ash colour; but the greater quills are black, and the middle are black



with white tips; the other parts of the back are of a dusky brown. Between the back and the wings, there are a few long feathers edged with orange, and the rump is dusky, and white mixed with transverse lines. The tail is dusky, and the breast, belly, and thighs are white. The legs are bare above the knees, and the legs, feet, and claws, are of a lead colour.

#### NATURAL HISTORY of the FULMAR.

**T**HIS is generally an inhabitant of the isle of St. Kilda, where it makes its appearance in November, and continues the whole year, except September and October; it lays a large white egg; and the young are hatched about the middle of June. This bird is of great use to the islanders; it supplies them with oil for their lamps, down for their beds, a delicacy for their tables, a balsam for their wounds, and a medicine for their diseases. It is also a certain prognosticator of the change of the wind; if it comes to land, no west wind is expected for some time; and the contrary when it returns and keeps at sea.

The Fulmar, like all the petrels, has a peculiar faculty of spouting from its bill, to a considerable distance, a large quantity of pure oil; which it does by way of defence, into the face of any one that attempts to take it: so that they are, for the sake of this panacea, seized by surprise; and this oil is subservient to the above-mentioned medicinal uses. Martin informs us that it has been used with success in London and Edinburgh in rheumatic cases. In the General Advertiser, June, 1761, is the following remarkable account from the isle of Mull. "A gentleman of the name of Campbell, being fowling among the rocks, and having mounted a ladder to take some birds out of their holes, was so surprised, by one of this species spouting a quantity of oil in his face, that he quitted his hold, fell down, and perished."

This bird is larger than the common gull; the bill is very strong, yellow, and hooked at the end. The nostrils are composed of two large tubes, lodged in one sheath; the head, neck, belly, and tail, are white; and the back and coverts of the wings ash coloured: the quill feathers are dusky; the legs yellowish. Instead of a back toe, it has only a sort of straight spur. The Fulmar feeds on the blubber or fat of whales, &c. which, being soon convertible into oil, supplies them constantly with means of defence, as well as provision for their young, which they cast up into their mouths. They are likewise said to feed on sorrel, which they use to qualify the unctuous diet on which they subsist.

Frederic Martens, who saw vast numbers of these birds at Spitzbergen, observes, that they are very bold, and hover round the whale-fishers in great flocks; and that when a whale is taken, in spite of all endeavours, they will light on it and pick out large lumps of fat, when the animal is alive. Whales are often discovered at sea by the multitudes of these birds flying; and when a whale is wounded, prodigious multitudes immediately follow its bloody track. It is a voracious bird, eating till it is obliged to disgorge its food.

#### NATURAL HISTORY of the WATER-RAIL.

**T**HE body of this bird is long and slender, with short concave wings. It is less fond of flying than running; which it does very swiftly along the edges of brooks covered with bushes; and as it runs, frequently flirts up its tail; in flying it hangs down its legs.

Its weight is four ounces and a half. The length of this bird to the end of the tail is twelve inches; the breadth sixteen inches, and the weight four ounces. The bill is slender, slightly incurvated, and one inch three quarters in length; the upper-chap is black, edged with red; the lower orange coloured; and the irides red: the head, the hind-part of the neck, the back, and coverts of the wings and tail are black, edged with an olive brown; the base of the wing is white; the throat, breast, and belly, are ash coloured; the sides under the wings are finely varied with black and white bars. The tail, which is very short, consists of twelve black feathers; and the ends of the two middle ones are tipped with rust colour. The legs are of a dusky flesh colour, placed far behind. The toes are very long.

#### NATURAL HISTORY of the KING-FISHER.

**T**HE King-fisher seems to unite in itself something of every class preceding. It has appetites for prey like the rapacious kinds, and an attachment to water like the birds of that element. It possesses the beautiful plumage of the peacock, the delicate shadings of the humming bird, the short legs of the swallow, and the bill of the crane.

This bird is somewhat larger than the swallow, and its shape is clumsy: the legs are very small, and the bill disproportionably long, being two inches from the base to the tip: the upper-chap is black, and the lower-chap yellow. The inelegant form of this bird is fully atoned for by the beauty of its colours. The top of the head, and the coverts of the wings are of a deep blackish green, spotted with bright azure: the back and tail are of the most resplendent azure: the belly is orange coloured, and a broad mark of the same colour extends from the bill to beyond the eyes, near which there is a large white spot. The tail, which is short, consists of twelve feathers of a rich deep blue, and the feet are of a reddish yellow.

This is one of the most rapacious little animals that skims the deep: it is continually in action, and feeds on fish, which it takes in surprizing quantities, considering its clumsy form and diminutive size. It chiefly frequents the banks of rivers, and, like the osprey, takes its prey by balancing itself at a certain distance above the water for considerable space, and then, darting into the deep, seizes the fish with inevitable certainty. In a bright day, the plumage exhibits a beautiful variety of brilliant colours, while the bird remains suspended in the air. This extraordinary beauty has probably given rise to fable, for fancy is always willing to increase the wonder, wherever there is any thing uncommon.

This species is the mute *halcyon* of Aristotle, which he describes with unusual precision. After describing the bird, he gives a description of the nest, which appears as fabulous and extravagant as any of the stories which the most inventive of the ancients have delivered. He says it appeared like those concretions that are formed by the sea-water; that it resembled the long-necked gourd, was hollow within, with a very narrow entrance, and that if it overflew, the water could not enter; that it resisted any violence from iron, but could be broke with a blow of the hand; and that it was composed of the bones of the sea-needle.

Part of this description, however, appears to be founded on truth. With regard to the form of the nest, his account exactly agrees with that which count Zimanni has favoured us with. Nor are the materials which Aristotle says it was composed of entirely of his own invention; any one who has seen the nest of the King-Fisher, must have observed that it was strewed with the bones and scales



of fish; the fragments of the food of the owner and its young: and those who will not admit it to be a bird that frequents the sea, must not confine their ideas to our northern shores; but consider that those birds which inhabit a sheltered place in the more rigorous latitudes, may endure exposed ones in a milder climate. Aristotle's observations were made in the East; and he admits that the *halcyon* sometimes ascended rivers. It is probable that this was in order to breed; for Zinanni informs us, that in his soft climate, Italy, it breeds in May, in the banks of streams that are near the sea; and after the first hatch is reared, returns to lay a second time in the same place.

As this bird has been said to build her nest upon the sea, that she might not be interrupted in this task, she has been said to be possessed of a charm to allay the fury of the waves; and the poets, indulging the powers of imagination, have dressed the story in all the robes of romance. The following is Mr. Fawkes's translation of what Theocritus has said upon the subject.

May *halcyon* smooth the waves, and calm the seas,  
And the rough south-east sink into a breeze;  
*Halcyon*, of all the birds that haunt the main,  
Most lov'd and honour'd by the Nereid train.

Both Aristotle and Pliny informs us, that this bird is most common in the seas of Sicily: that it sits only a few days, and those in the depth of winter; and that, during that period, the mariner may sail in full security: they were therefore called *halcyon* days; and, in after times, those words expressed any season of prosperity.

The ancient poets are full of fables relative to this bird, nor are their historians exempt from them. Cicero has written a long poem in praise of the *halcyon*, of which only two lines are now remaining. These fables have even been adopted by St. Ambrose, one of the earliest fathers of the church. "Behold," says he, "the little bird, which in the midst of the winter lays her eggs on the sand by the shore. From that moment the winds are hushed; the sea becomes smooth; and the calm continues for fourteen days. This is the time she requires; seven days to hatch, and seven days to foster her young. Their Creator has taught these little animals to make their nest in the midst of the most stormy season, only to manifest his kindness by granting them a lasting calm. The seamen are not ignorant of this blessing; they call this interval of fair weather their *halcyon* days; and they are particularly careful to seize the opportunity, as they need fear no interruption."

Innumerable instances might be produced of the credulity of mankind with respect to this bird; but the King-fisher, with which we are now acquainted, has none of those powers of allaying the storm, or building upon the waves: it is contented to make its nest on the banks of rivers, in such situations as not to be affected by the rising of the stream. When it has fixed upon a proper place, it makes with its bill a hole about a yard deep: sometimes it finds the deserted hole of a rat, or one caused by the root of a tree decaying, of which it takes quiet possession. It enlarges the hole towards the bottom, lines it with the down of the willow, and without any farther preparation, deposits its eggs there.

The nest of the King-fisher is very different from that described by the ancients, by whom it is said to be made in the shape of a long-necked gourd of the bones of the sea-needle. Plenty of bones, and the scales of fishes are indeed found there; but these are only the remains of the bird's food, and not brought there either for the purposes of warmth or convenience. The King-fisher, as Bellonius ob-

serves, feeds upon fish, yet cannot digest their bones or scales, but throws them up again as eagles and owls are seen to do a part of their prey.

In these holes the female King-fisher is often found with from five eggs to nine; and if the nest be robbed, she will again return and lay there. "I have had," says Reaumur, "one of those females brought me, which was taken from her nest about three leagues from my house. After admiring the beauty of her colours, I let her fly again, when the fond creature was instantly seen to return back to the nest where she had just before been made a captive. There, joining the male, she again begins to lay, though it was for the third time, and though the season was very far advanced. At each time she had seven eggs. The older the nest is, the greater quantity of fish-bones and scales does it contain: these are disposed without any order; and sometimes take up a good deal of room."

The King-fisher begins to lay early in the season, and produces her first brood about the beginning of April: the fidelity of the male exceeds even that of the turtle; and while the female is thus employed, he supplies her with large quantities of fish. At that season the hen, contrary to most other birds, is found plump and in good condition.

The modern vulgar have their fables concerning this bird as well as the ancients. It is an opinion generally received among them, that the flesh of the King-fisher will not corrupt; and that vermin will not approach it. With equal foundation it is said, that when this bird is hung up dead, its breast is always pointing to the north. It is certain, however, that the flesh of this bird is utterly unfit to be eaten, though its beautiful plumage preserves its lustre longer than that of any other bird we know.

#### THE AMERICAN KING-FISHER.

With regard to the general form, this bird resembles the European King-fisher, as well as in the bill and feet; but its tail is longer in proportion. The bill is strong and blackish, except towards the base, where it is of a reddish flesh-colour. The head is of a lead-colour, inclining to blue; on the top of which there is a kind of crest, formed of long loose pointed feathers. On each side of the head are two white spots; and the throat and under side of the neck are white. The breast is of a lead-colour. Six or seven of the prime quills are blackish, with small white spots on the outer webs, which altogether form transverse lines of white. The rest of the quills have white tips, and the inner covert feathers of the wings are white, with a little mixture of orange-colour. The tail is of a pale lead-colour, the feathers of which are tip and transversely marked with narrow bars of white. The belly, the thighs, and the covert feathers under the tail are white: the legs and feet are of a reddish brown, and the claws dusky.

#### THE LITTLE GREEN and ORANGE-COLOURED KING-FISHER.

The length of this bird is about five inches from the tip of the bill to the end of the tail, which is longer in proportion than the common King-fisher. The bill is of a dusky colour, except that the lower chap is reddish towards the base. The throat is of an orange colour, and a mark of the same colour runs on each side from the base of the bill over the eyes. The head, the hind part of the neck, the back, the tail and covert feathers of the wings are of a fine green; and a bar of the same colour runs across the breast; but the sides of the belly are of a bright reddish orange colour. The lower part of the belly, the thighs, and the covert feathers under the tail are white. The tail consists of twelve feathers, the two middle ones being a little longer than the



the rest; and the inner webs are all spotted with white. The inner coverts and ridges of the wings are of a light orange, and the quills are dusky, spotted with a light clay colour on the outer and inner webs, except a few of the outer quills. The legs and feet are small; and the toes, which are of a flesh colour, are connected like those of all other Kingfishers.

#### The KING-FISHER of CATESBY.

This is about the size of a thrush, and is the largest of all those with short tails. The head is large in proportion, and full of feathers, forming an irregular tuft, and of a blue colour. It has a white line under the eyes, and a white spot on the forehead. The breast is white, variegated with streaks of red and blue. The quill feathers of the wings are black tipped with white. The lower part of the belly is white, and the tail blue. It has three toes before, and one behind.

#### The SMYRNA KING-FISHER.

This bird, which is three times as large as the common King-fisher, has a very long bill of a red colour, thick at the base, and sharp at the point. The iris of the eyes is white; the top of the head, the neck, the lower part of the belly, and the thighs are brown. A broad white stripe runs across the breast into the scapular feathers of the wings. The back, wings, and tail, are of a fine deep green; and the legs and feet are of a beautiful red.

#### The KING-FISHER of the RIVER GAMBIA.

This bird is almost as large as a thrush, it has a long tail, and its wings are of a sea-green colour. The covert feathers are purple and blue, and the large feathers of the wings are of a dusky brown. The bill is red.

#### The KING-FISHER of BENGAL.

This is but little inferior to the thrush in size, and its bill is three inches long, of a fine scarlet colour, thick at the base, and sharp at the end. The iris of the eyes is of a fine yellow: the head, the upper part of the neck, and the back are brown; the breast, the throat, and part of the belly are white, having five large brown spots on each side. The lower part of the back, the wings, and the tail are of a fine bluish green, except the covert feathers of the wings, which are brown. The legs and toes are of an orange colour, and very short.

The King-fisher of Surinam is principally distinguished by its forked tail, of which two feathers are longer than the rest.

#### The SMALL KING-FISHER of BENGAL.

This is about the size of the common King-fisher, and has a fine scarlet bill, pretty thick at the base. It has a yellow spot on the forehead, and a white spot under the throat. A broad black line runs from the bill quite round the eyes. It has a tuft on the head of a dirty reddish colour, and beneath is a dark blue line, separated from the back by a broad white stripe. The back and wings are of a dark blue, and the upper part of the tail is red; but the belly, thighs, and the lower part of the tail are of a beautiful yellow. The legs and feet are reddish.

#### The QUURBATOS, or FISHER.

This bird is no larger than a sparrow, and its plumage is finely variegated. The bill, which is as long as the whole body, is very strong and sharp, and on the inside is armed with small teeth, resembling those of a saw. These birds skim with great rapidity in the air and on the surface of the water; and they are so numerous on each side of the river

Senegal, that they sometimes amount to several millions. Their nests are composed of earth, mixed with moss and feathers, and are of such curious workmanship, that they are proof against the rains. We are informed by Le Maire, that these nests are made on palm-trees, and at the extremity of the most slender branches; where they hang by a reed or straw of about eighteen inches long, and the bottoms hang like balls in the air.

#### NATURAL HISTORY of the BEE-EATER.

THE form of this bird is like that of the king-fisher, and the size exceeds that of a black-bird. The bill resembles that of a king-fisher, except that it bends a little more downwards. The feet also are exactly like those of the king-fisher. The tongue is slender, rough towards the end, and jagged as if it had been torn. Some have eyes of a hazel colour, and others of a beautiful red. The head is large in proportion to the body, and the feathers at the base of the upper chap are white, shaded with green and yellow. In some the back part of the head is of a deep red, and in others there is a mixture of green and red. A streak of black passes from the corners of the bill along each side of the head, and extends beyond the eyes. On the upper part of the head the feathers are of a pale yellow: the belly, neck, and breast are of a bluish green, and in some the feathers of the shoulders are blue on the under side, and in others green, with a mixture of red. The large green feathers are of an orange colour, with black tips, intermixed with some that are green. The tail, which is about three inches long, consists of twelve feathers; of which, two in the middle are considerably longer than the rest, and end in sharp points. The colour of the tail is blue in some, and green in others.

#### The BEE-EATER of BENGAL.

This is about the size of a black-bird. The bill is black, thick at the base, bending downward, and near two inches in length. The eyes are of a beautiful red; and on each side of the head a black streak extends from the corners of the bill to beyond the eyes; and near it, on the under part of the head, the feathers are of a pale yellow. The feathers on the belly, neck, and breast, are of a bluish green, and those on the shoulders in some are blue on the under side, and in others a mixture of red and green. The large wing feathers are approaching to an orange colour, with black and green tips intermixed. The tail, which is upwards of three inches long, consists of twelve feathers, the two middlemost of which are considerably longer than the rest. The colour of the tail is blue in some, and green in others.

#### Of the EMIGRATION of WATER-FOWL.

OF the vast variety of Water-fowl that frequent this island, it is astonishing to reflect how few are known to breed here: the desire of a secure retreat urges them to leave this country more than the want of food. The bulk of those birds are too timid and shy for so populous a place; but those that breed in the almost inaccessible rocks that impend over the British seas, still continue to build and lay there in vast numbers, having little to fear from the approach of mankind.

#### *The Heron.*

The crested Heron and the white Heron only visit us at uncertain seasons; but the common Heron and the Bittern never leave us.



*The Curlew.*

The Curlew sometimes breeds on our mountains, but the greater part retire to other countries.

*The Woodcock.*

Woodcocks breed in the moist woods of Sweden, and other cold countries.

*The Snipe.*

Snipes breed here sometimes, but the greatest part of them, and every other species of this genus, retire elsewhere.

*The Lapwing.*

The Lapwing continues the whole winter in this island; the Ruff breeds here, but retires in winter. The Red-Shank and Sand-Piper breed and reside here.

*The Plover.*

The green Plover, the long-legged Plover, and the Sanderling visit us only in winter. The Dot-trel appears in spring and autumn, but does not breed here. The Sea-Lark and the Norfolk Plover breed in England.

*The Water-Rail.*

The Water-Rail, the Water-Hen, and every species of these two genera, continue with us the whole year.

*The Coot.*

The Coot is a constant inhabitant of Great Britain.

*The Grebe.*

The great crested Grebe, the black and white Grebe, and the little Grebe, breed in this island, and never migrate; the others breed in Lapland, and only visit us occasionally.

*The Avosetta.*

The Avosetta breeds in Jutland, and only visits our shores in the winter time.

*The Penguin.*

The Penguin or great Auk sometimes breeds in St. Kilda. During Summer, the Auk, the Guillemot, and Puffin inhabit our maritime cliffs in great numbers. The black Guillemot breeds in St. Kilda, in the Bass isle, and in Llandidno rocks.

*The Diver.*

The Divers breed chiefly in the lakes of Sweden and Lapland.

*The Gull.*

Every species of the Gull breeds in the British isles, except the Skina and black toed Gull, which inhabit the Ferroe isles, Norway, and Iceland, and only visit our country occasionally.

*The Fulmar.*

The Fulmar breeds in the isle of St. Kilda, where it continues the whole year, except September and part of October.

*The Duck.*

Of the numerous species of the Duck kind, we know of no more than five that breed here, viz. the tame Swan, and tame Goose, the Shield-Duck, the Eider-Duck, and a very small portion of the wild Ducks. The rest contribute to form that amazing multitude of water-fowl that annually visit the woods and lakes of Lapland, Norway, Sweden, &c.

*The Cormorant.*

The Cormorant and Shag breed on our high rocks, and remain on our shores the whole year. The Gannet breeds in some of the Scotch isles, and visits our seas in pursuit of the herring and pilchard.

## OF THE MIGRATION of other BRITISH BIRDS.

IT is to be lamented that none, except two northern naturalists, Mr. Klein and Mr. Eckmark, have professedly treated on the migration of birds. We cannot, however, omit our acknowledgments to two eminent pens who have treated this subject as far as it related to rural œconomy; and in such a manner as to do honour to their respective countries: Mr. Alex. Mal. Berger, and Mr. Stillingfleet are the gentlemen we mean.

We wish we could induce others of our countrymen to follow their example: the matter can never be exhausted, as every country will furnish new observations; each of which, when compared, will serve to strengthen and confirm the other.

*Of the Hawk.*

All the ignoble species of this genus breed in Great Britain: of the Falcons, we only know that which is called the Peregrine, which annually builds its nest in the rocks of Llandidno, Caernarvonshire.

*Of the Owl.*

Every species breeds in this country, except the short-eared Owl, and the little Owl, and it is not certainly known that those do not. Hawks and Owls being birds of prey, have the means of living here at all times, and therefore are not obliged to change their place of abode.

*The Butcher-Bird.*

The red-backed Butcher-Bird breeds with us; but it is probable the others migrate, as we have not heard of them.

*The Crow.*

The Roydon Crow migrates regularly with the woodcock. It breeds in Sweden and Austria; but it appears very extraordinary that a bird should leave us, whose food is such that it may be found at all seasons in this country.

*The Woodpecker.*

Woodpeckers continue with us the whole year, their food being to be obtained at all times in the bark of trees.

*The Wrenneck.*

This bird disappears before winter, and revisits us in the spring, a little earlier than the cuckoo. If it feeds only on ants, as several have asserted, the cause of its migration is very evident.

*The Cuckoo.*

This bird disappears early in autumn; its retreat is entirely unknown to us.

*The Nuthatch.*

This bird continues in Great Britain the whole year.

*The Chough.*

As the diet of this bird is corn and insects, it is a constant inhabitant of Great Britain.

*The Grouse.*

The whole of this tribe, except the Quail, continues here the year round. The Quail either leaves us entirely, or retires towards the sea coasts.



# BIRDS.

*The NUTHATCH*



*The STARLING*



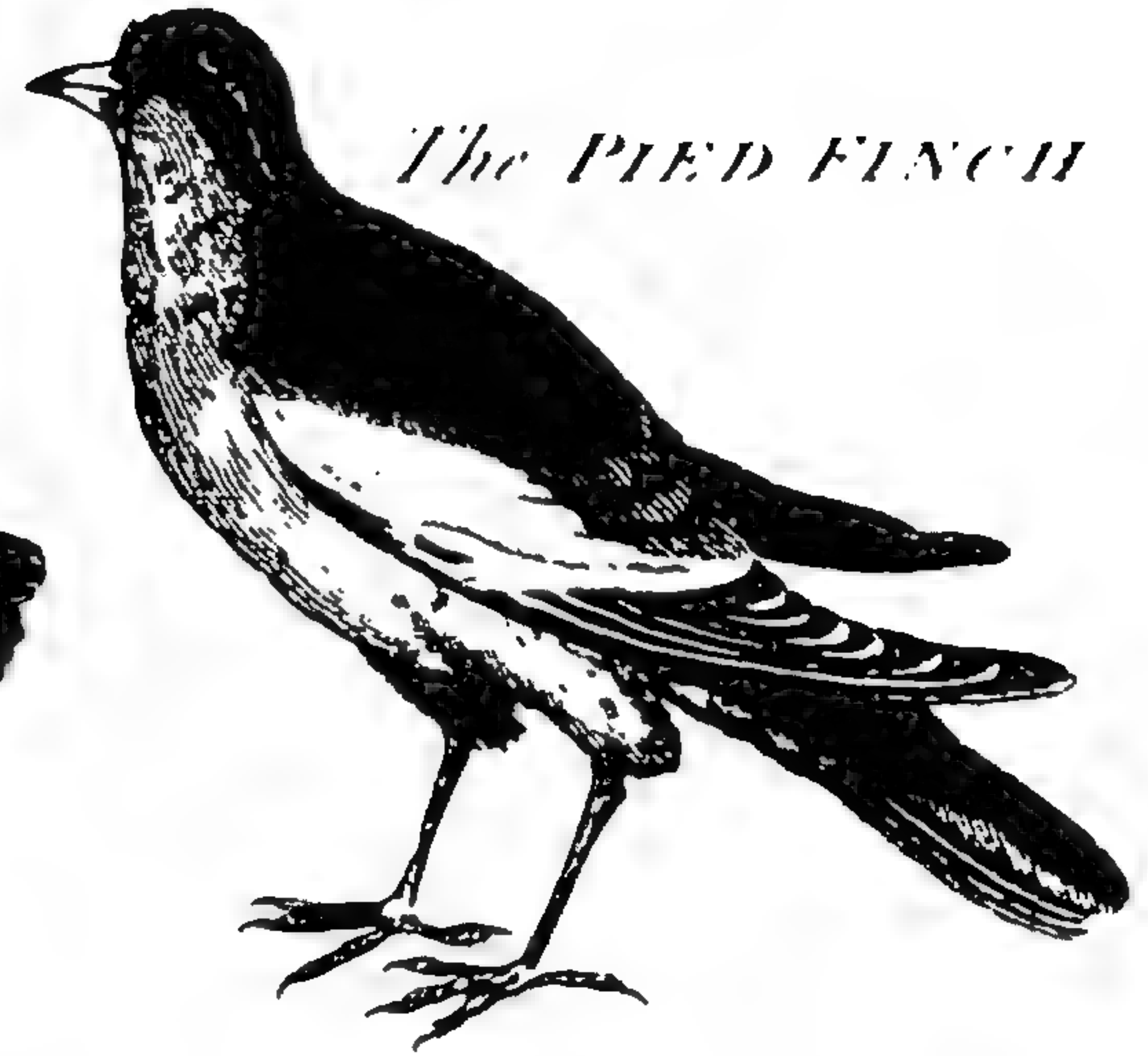
*The RING OUZEL*



*The CRESTED LARK*



*The PIED FINCH*



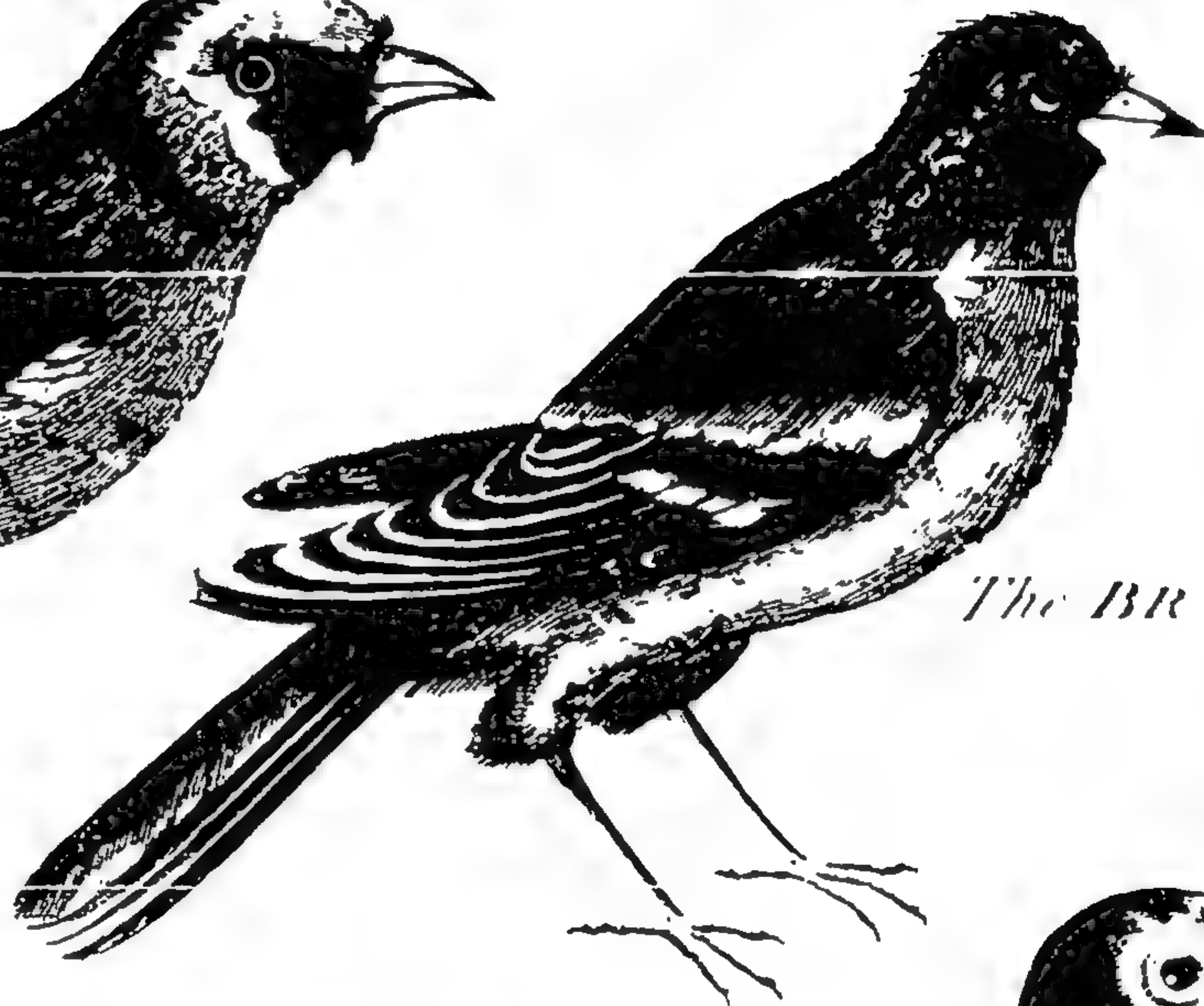
*The MERULA or REDSTART*



*The GOLD FINCH*



*The BRAMBLING*



*The BUNTING*



*The SISKIN*



*The CANARY BIRD*



*The HORTULANUS*









*The Bustard.*

This continues with us all the year, and inhabits our downs and their vicinities.

*The Ring-Dove.*

Many of these birds breed here; but the multitude that appears in the winter, is so disproportioned to what continue here the whole year, as to be a convincing proof, that the greatest part quit the country in the spring. Perhaps they go to Sweden to breed, and return from thence in Autumn. Mr. Eckmark says they entirely quit that country before winter. The Turtle either leaves us in the winter, or changes its place, and retires to the southern counties.

*The Thrush kind.*

The Red-Wing and the Fieldfare breed in Norway and other cold countries, where they pass their summers: they feed upon berries, which are found in great plenty in these kingdoms, and tempt them to visit us in the winter. The Fieldfare, Red-Wing, and the Royston Crow, are the only land-birds that constantly and regularly migrate into this island, and do not breed here.

*The Stare.*

The Stare breeds in this island; though it is probable that many of them remove to other countries for that purpose; for the produce of those that continue here, seems unequal to the vast multitudes of them that appear in winter. Possibly many of them migrate into Sweden.

*The Swallow.*

At the approach of winter every species disappears.

*Slender-billed small Birds.*

Though all these feed on worms and insects, yet only part of them leave these kingdoms. The Nightingale, the Black-Cap, the Fly-Catcher, the Willow-Wren, the Wheat-Ear, the Whinchat, the White-Throat, and the Stone-Chatter, leave us before winter; while the small and delicate Golden-Crested Wren braves our severest frosts. It is probable that Spain, or the south of France, is their winter asylum; as they are incapable of very distant flights.

*The Grosbeak and Crossbill.*

These birds breed in Austria, and seldom visit this island.

*The Finches.*

All Finches feed on the seed of plants, and all continue in some parts of these kingdoms, except the Siskin, which is said to come from Russia, and is only an irregular visitant. The Linnets shift their quarters, breeding in one part of this island, and remove with their young to others.

*Buntings.*

All the genus inhabit this island throughout the year, except the greater Brambling, which, in very severe seasons, is forced here from the north.

*Tit-Mice.*

They feed on insects, and continue the whole year in this country.

Having thus given a history of birds in general, we cannot take leave of this most beautiful part of the creation without reluctance. These splendid inhabitants of air possess all those qualities that can sooth the heart and cheer the fancy: the brightest colours, the roundest forms, the most active manners, and the sweetest music. In sending the imagination in pursuit of these, in following them to the chirruping grove, the screaming precipice, or the glassy deep, the mind naturally lost the sense of its own situation, and, attentive to their little sports, almost forgot the Task of describing them. Innocently to amuse the imagination in this dream of life is wisdom; and nothing is useless that, by furnishing mental employment, keeps us for a while in oblivion of those stronger appetites that lead to evil. But every rank and state of mankind may find something to imitate in those delightful songsters; and we may not only employ the time, but mend our lives by the contemplation. From their courage in defence of their young, and their assiduity in incubation, the coward may learn to be brave; and the rash to be patient. The inviolable attachment of some to their companions may give lessons of fidelity; and the connubial tenderness of others, be a monitor to the incontinent. Even those that are tyrants by nature never spread capricious destruction; and, unlike man, never inflict a pain but when urged by necessity.





A

# NEW, COMPLETE, and UNIVERSAL BODY, or SYSTEM of NATURAL HISTORY;

Being a Grand, Accurate and Extensive  
Display of Animated Nature.

## B O O K III.

*A New and Complete History and Description of FISHES in general.*

### INTRODUCTION concerning FISHES in general.

**T**HE great receptacle of Fishes is the ocean; and some have imagined, that all Fish are naturally of that salt element, and that they have accidentally migrated into fresh water. At this time, some of them swim up rivers to deposit their spawn; but the great body of Fishes keep to the Ocean, and would quickly expire in fresh water. In that extensive abode millions reside, whose very form is a secret to us. The curiosities, and the wants of mankind, have, indeed, forced many from their depths: with the figure of these they are acquainted, but for their pursuits, habits, and manners of gestation, these are all hidden in the turbulent element which they inhabit.

According to Linnæus, the number of Fish, whose names and figure we are in some degree acquainted with, somewhat exceeds four hundred. Most of them have the same external form; sharp at each end, and swelling in the middle; which enables them, with greater celerity and ease, to traverse the fluid which they inhabit. That peculiar shape which nature has granted to most Fishes, human art has endeavoured to imitate in such vessels as are designed to sail with the greatest swiftness; but the progress of such a machine is nothing, compared to the rapidity of an animal. Any of the larger kind of Fish can easily overtake a ship in full sail, play round it without any uncommon exertion, and swim before it at pleasure.

The fins are the chief instruments in the motion of a Fish: in some they are much more numerous than in others. A Fish completely equipped for sailing, is furnished with two pair, and three single fins, two above and one below. Thus qualified, it migrates with the utmost rapidity, and takes voyages of a thousand leagues in a season: but those Fish that have the greatest number of fins, have not always the swiftest motion; the shark, for example, is destitute of the ventral or belly fins, though it is thought to be one of the swiftest swimmers; and the haddock, though completely fitted for swimming, is less rapid in its motion.

Besides assisting the animal in progression, the fins are useful in rising, or sinking, in turning, or

even leaping out of the water. The pectoral fins, like oars, serve to push the animal forward; they are placed a little behind the opening of the gills, and are generally large and strong, answering the same purposes to all Fish in the water, as wings do to a bird in its proper element. By the continued motion of these, the flying Fish sometimes rises out of the water, and flies above an hundred yards, till, fatigued with its exertions, it falls again into the ocean. The ventral fins are placed under the belly, towards the lower part of the body. Whatever may be the situation of the Fish, these are always seen to lie flat on the water, and rather serve to raise or depress the Fish in its element, than assist progressive motion. The dorsal fin is situated along the ridge of the back, and not only serves to keep the Fish in equilibrio, but also to assist in its progressive motion. Many Fishes are destitute of this fin, but it is very large in all flat Fish, which have the pectoral fins proportionably smaller. The anal fin occupies that part between the anus and the tail, and serves to support the fish in its upright situation.

The tail, which is upright in some Fishes, and flat in others, appears to be the grand instrument of motion; the fins being only subservient to it. If the Fish is inclined to turn, a stroke with the tail sends it about: but, if the tail strikes both ways, the motion is progressive. If the dorsal and ventral fins of the Fish be cut off, it reels to the right and left. If it loses the right pectoral fin, it bears on that side: if the ventral fin on the same side be cut away, it loses its equilibrium entirely: but, when the tail is cut off, it is deprived of all motion, and is driven along with the current of the water.

It is certain, however, that the number, the size, and the situation of the fins, seem rather to correspond with the animal's figure, than entirely to answer the purposes of promoting its speed. If the head of the Fish is large and heavy, the pectoral fins are large, and placed forward, to prevent its over-setting. If the head of the Fish is small, sharp-pointed, and not too heavy for the tail, its pectoral fins are small, and it is totally destitute of the ventral fins.

Land



Land animals are generally furnished with a covering to keep off the injuries of the weather, so the inhabitants of the water are covered with a slimy glutinous matter, that defends their bodies from the immediate contact of the surrounding fluid, and assists them in their easy progress through the water. Beneath this, in many kinds, a strong covering of scales is found, which, like a coat of mail, still more powerfully defends it.

But, though the Fish seems as well furnished with the means of happiness, as quadrupeds or birds; yet, on a close examination of its faculties, we shall find it greatly their inferior. The sense of touching, which is enjoyed in some degree by beasts and birds; the Fish, covered up in its own coat of mail, can have but little acquaintance with.

The sense of smelling, so exquisite in beasts, and known a little among birds, is given to Fishes in a very moderate degree. All Fishes, indeed, have one or more nostrils; but as air is the only medium we know for the distribution of odours, it cannot be supposed that these inhabitants of the water can be possessed of any power of being affected by them. If they have any perception of smells, it must be in the same manner as we distinguish by our taste; and the olfactory membrane in Fish, serves them, perhaps, instead of a distinguishing palate.

The sense of tasting is very defective among Fishes; the palate of most of them is hard and bony, and consequently incapable of the powers of relishing different substances: these voracious animals have been often seen to swallow the fisherman's plummet instead of the bait.

The sense of hearing, Fishes are entire strangers to, or they possess it in a very imperfect and limited degree. It is certain, however, that anatomists have not been able to discover, except in the whale kind, the smallest traces of an organ about the head of Fishes. To what purpose, indeed, should this sense be given to animals that are incapable of making themselves heard? Having no voice to communicate with each other, they consequently have no necessity for an organ of hearing. We are told by Mr. Gouan, who kept some gold fishes in a vase, that whatever noise he made, he could not disturb or alarm them. He hallooed as loud as he was able, and the Fishes still appeared insensible: it is necessary to be observed, indeed, that he placed a piece of paper between his mouth and the water, to prevent the vibrations from affecting the surface; and when the paper was removed, and the sound had its full scope upon the water, the Fishes instantly seemed terrified, and shrunk to the bottom. From this, and many other experiments, it is generally believed, that Fishes are as deaf as they are mute.

Fishes are in a tolerable degree possessed of the sense of seeing; and yet, if we compare it to that of other animals, even this appears obscure. The eyes of most Fish are covered with the same transparent skin that covers the rest of the head, which nature seems to have furnished to defend them in the water, as they are without eye-lids. The chryselline humour, which in quadrupeds is flat, in Fishes is perfectly round, or sometimes in the shape of an egg. Hence it appears, that Fish are extremely near sighted, and that they can see objects but at a very small distance, even in the water.

It is indeed very apparent, that Fish are far behind terrestrial animals in their sensations, and consequently in their enjoyments. Nature seems to have fitted them with appetites and powers of an inferior kind, and formed them for a sort of passive existence in the heavy element to which they are consigned: their senses are incapable of making any distinctions, but they move forward in pursuit of whatever they can swallow, conquer, or enjoy.

A ceaseless appetite impels them to encounter

every danger; and indeed their rapacity seems insatiable. Even when taken out of the water, and almost expiring, they greedily swallow the very bait that allured them to destruction. Their digestive powers seem, in some measure, to increase with the quantity of food they are supplied with. But though their appetites are ever craving, no animals can endure the want of food for so long a time. Gold and silver Fishes, which are kept in vases, are often seen for months without apparent sustenance: whether they feed on the water insects, which are too minute for observation, or whether water alone is a sufficient supply, is not evident. Even the pike, one of the most voracious of Fishes, will live in a pond where there is none but himself.

Fishes that have very small mouths feed upon worms, and the spawn of others; some that have larger mouths, seek larger prey. Those with the largest mouths pursue almost every thing that has life. The life of a Fish, from the smallest to the greatest, is indeed but one scene of hostility, violence, and evasion. The smaller fry, standing no chance in the unequal combat, escape into those shallows where the greater are unable to pursue. There they become invaders in turn, and feed upon the spawn of larger Fish, which floats upon the surface of the water: yet, even in the shallows, they are beset with dangers; the muscle, the oyster, and the scallop, lie in ambush at the bottom, with their shells open, to receive the inadvertent wanderers, imprison them by closing their shells, and prey upon them at their leisure.

The pursuit of Fishes is not, like that of terrestrial animals, confined to a single region, or to a single effort: shoals of one species follow those of another through vast tracts of ocean, from the pole even down to the equator. The cod pursues the whiting even from the banks of Newfoundland to the southern shores of Spain. Thus the cachetot pursues a shoal of herrings, and swallows thousands at a gulp.

Though this may be one cause of the annual migration of Fishes, yet many are induced to change the place of their residence for one more suited to their constitutions, or more adapted to depositing their spawn. None of them delight in very cold water, but generally frequent those places where it is warmest. In summer they abound in the shallows near the shore, where the sun has power to warm the water to the bottom; but in winter they frequent the greatest depths of the sea, where the cold of the atmosphere is not sufficiently penetrating to reach them. Fresh-water Fishes are often seen dead after severe frosts, which have been killed by the severity of the cold, or by their being excluded from air by the ice.

Though all Fish live in the water; yet they all require air for their support. Those of the whale-kind breathe the air in the same manner that we do, and come almost every minute to the surface to take a fresh inspiration: but those which remain entirely under water, must be supplied with air, or they will expire in a very short time. When the ice covers the whole surface of a pond, and thus keeps off the air from the subjacent fluid, we sometimes find the Fish are all destroyed.

In every light we have hitherto considered Fish, they appear inferior to land animals; in the simplicity of their conformation, in their senses, and their enjoyments; but, as some degree of compensation, they enjoy that humble existence a much longer term than any other class of animated nature. We are told, by Bacon, that, "Most of the disorders incident to mankind arise from the changes and alterations of the atmosphere; but Fishes reside in an element little subject to change; theirs is an uniform existence; their movements are without effort,



fort, and their life without labour. Their bones also which are united by cartilages, admit of indefinite extension; and the different sizes of animals of the same kind among Fishes is very various. They still keep growing; their bodies, instead of suffering the rigidity of age, which is the cause of natural decay in land-animals, still continue increasing with fresh supplies; and as the body grows, the conduits of life furnish their stores in greater abundance. How long a Fish, that seems to have scarce any bounds put to its growth, continues to live, is not ascertained; perhaps the life of a man would not be long enough to measure that of the smallest."

Two methods, which are more ingenious than certain, have been devised for determining the age of Fishes; the one is by the circles of the scales, the other by the transverse section of the back-bone. By the first method, when a Fish's scale is examined through a microscope, it will appear to consist of a number of circles, one within another: and, as in trees, their age is known by the number of circles in the transverse section of them; so in Fishes we discover their age by the number of circles in every scale, reckoning one ring for every year. Mr. Buffon found a carp, which, by this method of computation, appeared to be upwards of an hundred years old. However incredible this may appear, the accounts of several authors of veracity tend to confirm the discovery. Gesner mentions one of the same age; and Albertus brings us an instance of one that existed upwards of double that period.

The skate and the ray, having no scales, their ages may be known by the other method, which is, by separating the joints of the back-bone, and then examining the number of rings, which the surface where it was joined exhibits.

We cannot vouch for the certainty of these methods, but we have no reason to doubt the extraordinary age of some Fishes. But the fecundity of these animals is more extraordinary than their longevity. Some produce their young alive, and others only eggs; the former are the least prolific, and yet they bring forth in great abundance. The viviparous blenny, for instance, produces two or three hundred at a time, all alive, which immediately divert themselves by playing round the parent. Those which exclude their progeny in eggs, and are obliged to leave them to chance, at the bottom of shallow water, or floating on the surface where it is deeper, are much more prolific; the stock being in some degree proportioned to the danger there is of its consumption. But very few of these eggs produce an animal, as they are devoured by Fishes and aquatic birds; still, however, the numbers that escape are

sufficient to supply the deep with inhabitants, and to relieve the wants of a very considerable part of mankind.

The number that a single Fish is capable of producing appears astonishing: a single cod is said to produce, in one season, as many of its kind, as there are inhabitants in England. Lewenhoeck assures us, that, in one season, the cod spawns above nine million of eggs: the flounder produces above one million, and the mackarel above five hundred thousand. This amazing increase preserves the species in the midst of innumerable enemies, and furnishes the rest with a sustenance suitable to their nature.

All Fishes, except those of the whale kind, are destitute of those parental solitudes, which so strongly mark the manners of the greater part of the terrestrial animals. When they have deposited their burthens, they leave their little progeny to shift for themselves. The spawn continues in its egg state, in proportion to the size of the animal. The young of the salmon, for instance, continue in the egg, from the beginning of December till the beginning of April; those of the carp continue in the egg about three weeks; and the little gold-fish of China is more expeditiously produced; but, scarce one in a thousand survives the numerous perils of its youth: the very male and female that brought them forth are equally dangerous and formidable with the rest.

There are some Fishes, indeed, that possess finer organs, and higher sensations; that nurse their young with care and tenderness, and protect them from all injuries: the *cetaceous* tribe, or the Fishes of the whale kind, are of this kind. The *cartilaginous* kinds, or those which have gristles instead of bones, bring their young alive into the world, and, though not capable of nursing them, defend them with activity and courage. But the fierce regardless tribe that leave their spawn without any protection, are called the *spinous*, or bony kinds; their bones resembling the sharpness of a thorn.

Thus the three grand divisions in the Fish kind are the *cetaceous*, the *cartilaginous*, and the *spinous*; all differing from each other in their conformation, their appetites, and their production.

Physicians assure us, that Fishes afford but very little nourishment as food, and soon corrupt: that they are cold and moist, and consequently produce juices of the same kind, which are ineffectual in strengthening the body: that they abound in a gross sort of oil and water; that they have few volatile particles, and are therefore less fit to be converted into the substance of our bodies.

## C H A P. I.

NATURAL HISTORY of FISHES of the CETACEOUS KIND, viz. the WHALE and its Varieties, the CACHALOT, the DOLPHIN, the GRAMPUS, and the PORPUS.

### NATURAL HISTORY of the GREENLAND WHALE.

LAND animals, compared with those of the deep with respect to magnitude, appear contemptible in the competition. It is indeed probable, that quadrupeds once existed much larger than those that are to be found at present; for it is evident, from the skeletons of some that have been dug up at different times, that there must have

been terrestrial animals twice as large as the elephant: but creatures of such enormous bulk required a proportionable extent of ground for subsistence, and, being rivals with men for large territory, they perhaps have been destroyed in the contest.

This species is the largest animal of which we have any certain information: it is even at present sometimes found in the northern seas ninety feet in length; but formerly they were taken of a much greater



greater size, when the captures were less frequent; and the fish had time to grow. Such is their bulk within the arctic circle; but in those of the torrid zone, where they are unmolested, Whales are still seen one hundred and sixty feet long.

It is a large heavy animal, and the head alone makes a third of its bulk: the underlip is much broader than the upper. The tongue is composed of a soft spongy fat, capable of yielding five or six barrels of blubber. The gullet is very small for so vast a fish, not exceeding four inches in width. In the middle of the head are two orifices, through which it spouts water to a vast height, and with a great noise, especially when disturbed or wounded. The eyes are not larger than those of an ox: they are placed towards the back of the head, being the most convenient situation for enabling them to see both before and behind. On the back there is no fin, but on the sides, beneath each eye, are two large ones. The tail is broad and semi-lunar; and when the fish lies on one side, its blow is tremendous.

This Whale varies in colour; the back of some being red, and the belly generally white. Some are black, others mottled, and others quite white, according to the observations of Marten, who says, that their colours in the water are extremely beautiful, and that their skin is very smooth and slippery.

What is called Whalebone, adheres to the upper jaw of the animal, and is formed of thin parallel laminæ, some of the longest being four yards in length: of these there are commonly three hundred and fifty on each side, and in old fish a great many more; of these about five hundred are of a length proper for use, the others being too short. They are surrounded with long strong hair, not only to prevent their hurting the tongue, but as strainers to prevent the return of their food when they discharge the water out of their mouths.

From these hairs Aristotle gave the name of *the bearded Whale*, to this species, which he tells us had in its mouth hairs instead of teeth; and Pliny describes the same under the name of *musculus*. Though the ancients were acquainted with these animals, yet it appears they were ignorant of their uses, as well as of the method of fishing for them.

Aldrovandus, indeed, describes from Oppian, what he mistakes for Whale fishing: he was deceived by the word *κητος*, which is used not only to express Whale in general, but any great fish. The poet here meant the shark, and shews the way of taking it in the very manner practised at present, by a strong hook baited with flesh. He describes too its three-fold row of teeth, a circumstance which at once disproves its being a Whale.

Whose dreadful teeth in triple order stand,  
Like spears out of his mouth.

Though so bulky an animal, the Whale swims with vast swiftness, and generally against the wind. It brings either one or two young at a time. Its food is a certain sort of small snail, and, as Linnæus says, the *medusa*, or sea blubber.

The great resort of this species is within the arctic circle, but they sometimes visit our coasts. Whether this was the British Whale of the ancients, we cannot pretend to say, only we find, from a line in Juvenal, that it was of a very large size.

As much as British Whales in size surpass

The Dolphin race, so great was their

The English were late before they engaged in the Whale fishery: it appears by a set of queries, proposed by an honest merchant in the year 1775, in order to get information in the business, that we were

then totally ignorant of it, being obliged to send to "Biscay for men skilful in the catching of the Whale, and ordering of the bil; and one cooper skilful to fet up the staved cask." This indeed appears very strange; for by the account Ochter gave of his travels to King Alfred, near seven hundred years before that period, it is evident, that he made that monarch acquainted with the Norwegians practising the Whale fishery; but it seems all memory of that profitable employ, as well as of that able voyager Ochter, and all his important discoveries in the north, were lost for near seven centuries.

It was carried on by the Biscayeners long before we attempted the trade, not only for the sake of the oil, but also of the Whalebone, which they seem to have long trafficked in. The earliest notice we find of that article in our trade is by Hackluyt, who says it was brought from the bay of St. Laurence by an English ship that went there for the *barbes* and *fynnes* of Whales, and train oil, A. D. 1594, and who found there seven or eight hundred *Whale fynnes*, part of the cargo of two great *Biscayne* ships, that had been wrecked there three years before. Previous to that, the ladies stays must have been made of split cane, or some tough wood, as Mr. Anderson observes in his Dictionary of Commerce; it being certain, that the Whale fishery was carried on, for the sake of the oil, long before the discovery of the use of Whalebone.

The great resort of these animals was found to be on the inhospitable shores of Spitzbergen, and the European ships made that place their principal fishery, and for numbers of years were very successful: the English commenced that business about the year 1598, and the town of Hull had the honour of first attempting that profitable branch of trade. At present it seems to be on the decline, the quantity of fish being greatly reduced by the constant capture for such a vast length of time: some recent accounts inform us, that the fishers, from a defect of whales, apply themselves to the seal fishery, from which animals they extract an oil. We are also told, that the poor natives of Greenland begin to suffer from the decrease of the seal in their seas, it being their principal subsistence; so that should it totally desert the coast, the whole nation would be in danger of perishing through want.

In ancient times, the Whale seems never to have been taken on our coasts, but when it was accidentally flung ashore: it was then deemed a royal fish, and the king and queen divided the spoil; the king asserting his right to the head, and her majesty to the tail.

The Whale uses the tail only to advance itself forward in the water; this serves as an oar to push its mass along; and its enormous bulk cuts through the ocean with amazing force and celerity. The fins are principally used for turning in the water, and giving a direction to the velocity impressed by the tail.

The Whale produces its young at the end of nine or ten months, and is fatter at that time than usual, particularly when she is near her time of bringing forth. When she suckles her young, she throws herself on one side on the surface of the sea, and the young ones attach themselves to the teat. She has two breasts, which are white in some, and speckled in others, and are filled with milk, resembling that of land animals.

The tenderness of the female for her offspring is very remarkable: wherever she goes, she carries it with her, and when closely pursued, keeps it supported between her fins. Even when wounded, she still clasps her progeny. If she plunges to avoid danger, she takes it to the bottom with her, but rises more frequently than usual, in order to give it breath.

They



They are generally seen in shoals of different kinds together, and migrate from one ocean to another in very large companies. It appears astonishing how a number of these enormous animals find subsistence together; and still more extraordinary that they are usually fatter than any other animals of whatsoever element.

The Whale is an inoffensive animal, and consequently has many enemies, which take advantage of his disposition, and his inability to combat: a small animal of the shell-fish kind, called the whale-louse, sticks to his body, like shells that are seen at the foul bottom of a ship. It usually takes its station under the fins, and, spight of the efforts of the Whale, it continues its hold, and lives upon the fat; nature having furnished it with instruments adapted to the purpose.

The sword-fish is also a terrible enemy to the Whale: the latter has no instrument of defence except the tail, with which it endeavours to strike the foe. And indeed a single blow taking place would effectually kill it: but the sword-fish is extremely active, and easily avoids the stroke; then bounding into the air, it falls upon its adversary, not with intent to pierce with its pointed beak, but to cut with its toothed edges. "The sea," says Anderson, "all about is dyed with blood, proceeding from the wounds of the Whale; while the enormous animal vainly endeavours to reach its invader, and strikes with its tail against the surface of the water, making a report at each blow louder than the noise of a cannon."

A cetaceous animal, called, by the fishermen of New England, the killer, is a still more powerful enemy. A number of these surround the Whale; some attack it with their teeth before, and others behind, till the great animal is subdued; and, when it becomes their prey, it is said that they only devour its tongue.

But, the greatest of all the enemies of the Whale, is man: he destroys more of those enormous fishes in a year than the rest do in an age. The great resort of these animals was on the inhospitable shores of Spitzbergen; where the distance of the voyage, the severity of the climate, the dangers of the icy sea, together with their own formidable bulk, might have been expected to protect them from human injury: all these however were but slight barriers against the arts, the courage, and the necessities of man.

The flesh of the Whale is considered as a dainty in some nations, and the French seamen sometimes dress and use it as their ordinary diet: the English and Dutch sailors say it is hard and ill-tasted, but the French assert the contrary. The savages of Greenland, and those near the south pole, are exceedingly fond of it. They not only eat the flesh, but drink the oil, which they esteem one of their greatest delicacies. When they are so fortunate as to find a dead Whale, they make their abode near it, and seldom remove while any flesh remains upon the bones.

In the court-yard of St. James's, is placed one of the bones of the lower jaw of a Whale. We think it not impertinent to mention this, as it may tend to rectify a mistake of the numerous spectators who daily view it, and who in general suppose it to be a rib. They may, however, be easily distinguished; for the jaw-bone is of an irregular bend, and the rib is circular: and in circumference the jaw-bone measures four times as much as the rib.

#### The PIKE-HEADED WHALE.

The head is of an oblong form, sloping down, and gradually growing narrower to the nose; about six feet eight inches from the end of which, are two spout-holes, separated by a thin division. The eyes

are small, the pectoral fins about five feet long, and eighteen inches broad. It has a large horny protuberance on the back, about eight feet and an half from the tail; and the tail is about nine feet and an half broad. The belly is uneven, and formed into folds lengthways: the skin, which is remarkably bright and smooth, is black on the back, and white on the belly.

This species has its name from the shape of its nose, which is narrower and sharper pointed than that of other Whales.

This description was made from a Whale taken on the coast of Scotland, which was forty-six feet in length, and its greatest circumference twenty feet.

#### The ROUND-LIPPED WHALE.

The lower lip of this species is broader than the upper, and of a semi-circular form. One of them was taken near Abercon-castle, which was seventy-eight feet in length, and thirty-five in circumference. The gape was very wide; the tongue fifteen feet and an half long; the mouth was furnished with short whalebone about three feet in length; and two spout holes, of a pyramidical form, were on the forehead. The eyes were thirteen feet from the end of the nose: the length of the pectoral fins was ten feet; and the height of the back fin three feet. The back fin was placed near the tail, which was eighteen feet in breadth. The belly was full of folds.

There are no less than seven different kinds of the Whale, properly so called, viz.

The great Greenland Whale, which is black on the back, and has no back-fin.

The Iceland Whale, which is whitish on the back, and has no back-fin.

The New England Whale, which has a hump on the back.

The Whale with six humps on the back.

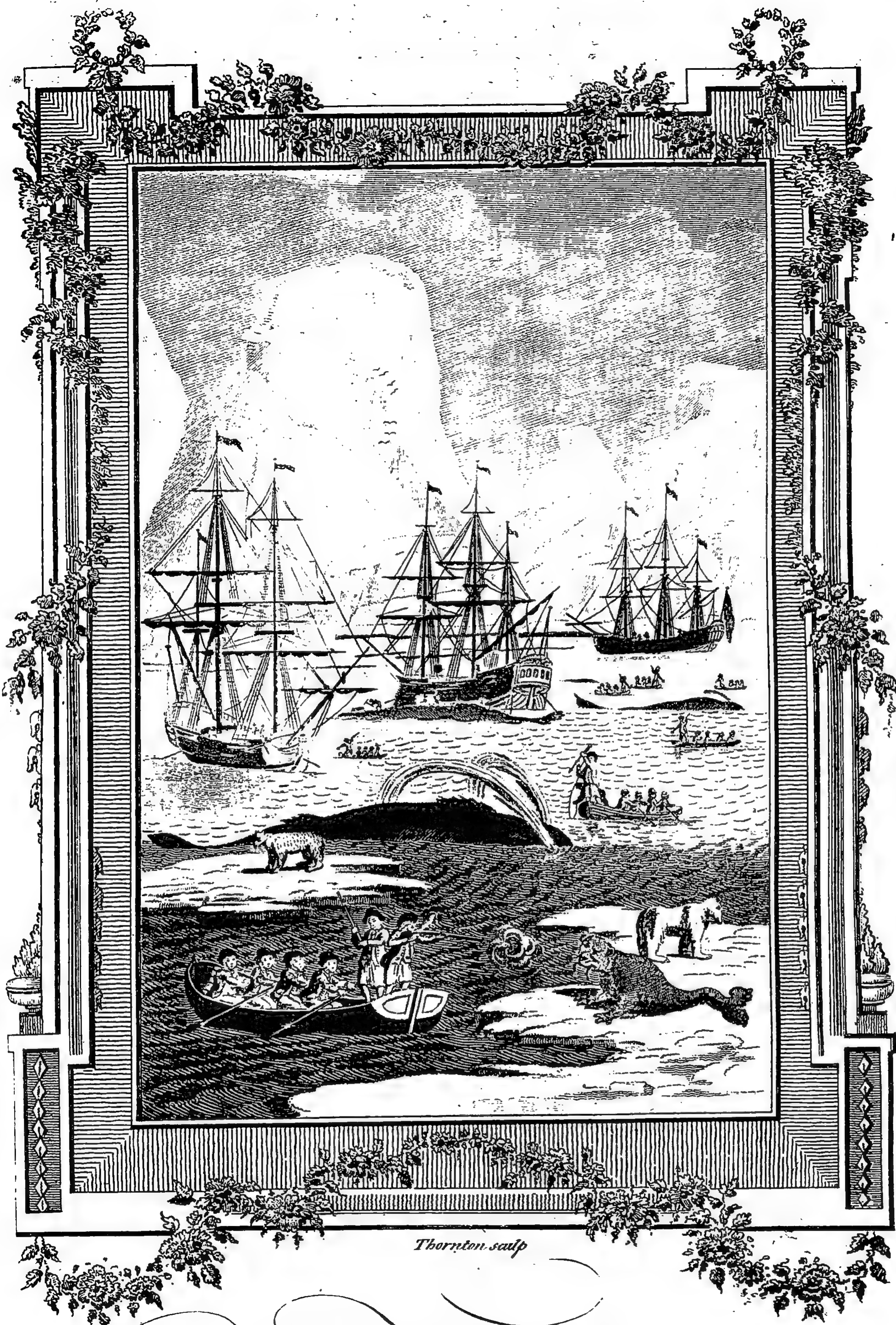
The fin fish, which is distinguished by a fin on the back, placed very low, and near the tail. Its length is equal to that of the common kind, but it is much more slender. The blubber on the body of this kind is very inconsiderable, which, added to its extreme fierceness and agility, render the taking of it very dangerous, and cause it to be neglected by the fishermen; who are greatly disappointed on seeing it, for, on its appearance, the others retire out of those seas.

#### NATURAL HISTORY of the CACHALOT, or SPERMACELE WHALE.

A Whale of this species was brought into Greenland dock, by a trading vessel, in January, 1762. Those who were concerned in taking it, give the following account of this fish, and the manner in which it was killed.

Going through the Hope, they saw something floating at a distance, which had the appearance of the mast of a ship; but, as they approached it, they perceived it to be a large fish, and, upon seeing it cast up a great quantity of water, concluded it was a Whale. They chased him ashore below the Hope-Point, and then went off to him in their boats. He seemed a motionless lump, his head and tail being concealed in the water. At first they pierced the prominent parts; and, after having dug a hole about twelve inches deep, a great torrent of blood issued forth. Then they withdrew to some distance, and soon after the boat had passed him, (as the water was deep enough over his tail) he struck the ground with such violence, as to force up stones and mud to a considerable height in the air. They waited about three quarters of an hour, and then he expired with the most horrible groans. After this, they fastened a cable to his body, and at length





Thornton sculp

View of the WHALE FISHERY, &c. in Greenland.







length-brought him to Greenland-Dock, where he was daily visited by several thousands of people. Indeed the curiosity of the people drew them to Greenland-Dock, after the Whale stunk so extremely, as to be offensive at an hundred yards distance.

They took out of his head eight puncheons of spermaceti, which lay between the eyes and the spout-hole, in different cells of the brain. Its length was fifty-four feet, and its breadth fourteen; and the length of the lower jaw was ten feet; the tail measured fifteen feet.

The skeleton of a Whale of this kind was lately shewn at Mr. Rackstrow's exhibition-room, in Fleet-street. Those who shewed this curiosity said it would contain thirty people in its head, and fifty in its chest; and that twelve hogheads of spermaceti oil had been taken out of its upper jaw, or rather that part of the head above it, which was entirely composed of flesh and oil.

This Whale was thrown ashore on the Isle of Thanet, February 2, 1762, and measured, from the snout to the tail-fin, seventy-two feet. The upper jaw, which appeared to be one solid bone, was sixteen feet long, and six broad at the top, where it was widest, and from whence it grew narrower to the end of the snout, which terminated in a point. Along the middle of it run a deep round groove, through which he sucked up the water, which he afterwards discharged at the spout-hole. From the top of this jaw proceeded a large thick bone, which turned upwards almost perpendicularly to the height of about four feet, and formed part of a kind of skull. The under jaw was much narrower than the upper, which is just the reverse of the toothless Whale. At the distance of about eight feet from the snout, it divides and becomes forked, in order to receive in the cavity a protuberance of the upper jaw, which seems exactly to fit it. This jaw had two rows of teeth, of which only one tooth then remained; but this being quite loose, and kept in its place only by a piece of wire, it seems doubtful whether it be the real tooth or not. The upper jaw has no teeth; but, instead of it, there is a groove or socket to receive those of the lower: so that, when the mouth was shut, they must have resembled so many pointed weapons in a sheath.

The sockets of the eyes, which were almost round, and placed nearly at the farthest part of the jaws, measured about eighteen inches over. Hence, what is told us by some writers, that the chryselline humour of the eye in this fish is not larger than a pea, must appear to common reason as a fable; for it cannot be conceived, that nature is so unequal in her proportions. Beyond the sockets of the eyes are the two fin-bones, which are very thick, five feet long, and two feet three inches in the broadest part.

There were eleven ribs on each side, the largest of which was ten inches in circumference. They formed a cavity, eight feet wide, within the body of the fish, and in which were contained the heart, lungs, &c. The back-bone was nearly the same distance from the floor, by which the ribs were supported. The back-bone, which is three feet ten inches thick, measured in the round part only; (the upper part of it being closely set, throughout the whole length of it, with spinal bones, like those of a hog) and the tail-fins, composed the rest of this skeleton. The tail-fins were each eight feet long.

Though many parts of this skeleton seemed much decayed, owing perhaps in a great measure to the injuries it must have unavoidably received in being removed from place to place, it was nevertheless highly worthy the attention of those, who delight in natural curiosities.

The substance called Spermaceti, which is prepared from the brain of this Whale, is an excellent

balsamic, and a very valuable medicine in diseases of the breast; as also to blunt the sharpness of the humours. It is very efficacious in old coughs, proceeding from defluxions, and in all internal ulcers. Indeed, various are the uses of this medicine, with respect to internal application: when applied externally, it is emollient and vulnerary, and is often used as a cosmetic, to soften the skin, and to render the complexion clear.

#### The GREAT-HEADED CACHALOT.

The head of this species is of an oblong form, and of such a bulk as to exceed that of all the rest of the body. The end of the upper jaw is about five feet longer than that of the lower: the spout hole is placed a little above the middle of the nose, and is divided in the middle, and covered with a lid. In the lower jaw there are forty-two teeth, bent like a sickle, thick in the middle, and growing smaller towards each end. The eyes are very small, not exceeding those of a haddock in magnitude; on the middle of the back it has a long spine instead of a fin: the skin has a silky appearance, is thin, and of a black colour. The length of this species is usually about fifty-four feet; and Linnæus informs us, that it pursues and terrifies the porpus so much, as frequently to drive them on shore.

#### The ROUND-HEADED CACHALOT.

One of this species was cast ashore on one of the Orkney isles, about twenty-four feet in length. The head of it was round, and the opening of the mouth small: the teeth were about an inch and three quarters long, and about the thickness of a man's thumb in the largest part. It had a rough place on the back, instead of a fin.

#### The HIGH-FINNED CACHALOT.

The spout-hole of this animal is placed in the front, and it has a fin on the middle of the back, which *Sibbald* compares to the mizen mast of a ship. The head abounds with the best sort of spermaceti. The teeth are slightly bent, about seven inches in length, and the greatest circumference nine. They are much compressed on the sides, and the points are rather blunt than flat: they are thin towards the bottom, having a very narrow but long orifice, or slit, hollowed to the depth of five inches and a quarter; and the teeth are immersed in the jaw as far as that hollow.

#### NATURAL HISTORY of the DOLPHIN, the GRAMPUS, and the PORPUS.

THESE fish have all teeth both in the upper and the lower jaw, and are much smaller than the whale. The Grampus, which is the largest, seldom exceeds twenty feet, which may be distinguished by the flatness of its head, resembling, in some degree, a boat turned upside down. The Porpus resembles the Grampus in many things, but the snout is not above eight feet long; its snout also has more the appearance of that of an hog. The Dolphin greatly resembles the Porpus, except that its snout is longer and more pointed. They have all fins on the back; they have all very large heads, like the rest of the Whale-kind; and resemble each other in their appetites, their manners, and conformations; being equally voracious, active, and roving.

Their great agility prevents their being often taken. They seldom remain a moment above water; sometimes, indeed, their too eager pursuits expose them to danger; and a shoal of herrings often allures them out of their depth. Then indeed the hungry animal continues to flounder in the shallows till knocked on the head, or till the retiring tide



tide seasonably comes to its relief. But all this tribe, and the Dolphin in particular, are equally swift and destructive. No fish could escape them, but from the awkward position of the mouth, which is placed in a manner under the head: yet, even with these disadvantages, their depredations are so great, that they have long had the appellation of the plunderers of the deep.

The predilection of the ancients in favour of these animals, particularly the Dolphin, is not easily accounted for. Historians and philosophers seem to have contended who should invent the greatest number of fables concerning them. The Dolphin was celebrated in the earliest time for its fondness to the human race, and was distinguished by the epithets of the boy-loving and philanthropist. Scarce an accident could happen at sea, but the Dolphin offered himself to convey the unfortunate to shore. The musician flung into the sea by pirates, the boy taking an airing into the midst of the sea, and returning again in safety, were obliged to the Dolphin for its services. It is indeed difficult to assign a cause why the ancients should thus have invented so many fables in their favour. Their figure is far from prejudicing us in their interests; their extreme rapacity tends still less to endear them: we know nothing that can reconcile them to man, and excite his prejudices, except that when taken they sometimes have a plaintive moan, with which they continue to express their pain till they expire. This, at first, might have excited human pity; and that might have produced affection. At present they are regarded even by the vulgar, in a very different light; their appearance is far from being esteemed a favourable omen by the seamen; and from their boundings, springs, and frolics in the water, experience has taught the mariners to prepare for a storm.

Neither is it to one circumstance only that the ancients have confined their fabulous reports concerning these animals; as from their leaps out of their element, they assume a temporary curvature, which is not their natural figure in the water; the old painters and sculptors have universally drawn them wrong. A Dolphin is scarce ever exhibited by the ancients in a strait shape, but curved, in the position which they sometimes appear in when exerting their force; and the poets too have adopted the general error. Even Pliny has asserted, that they instantly die when taken out of the water; but Rondelet, on the contrary, assures us, that he has seen a Dolphin carried alive from Montpellier to Lyons.

The moderns have juster notions of these animals, and disregard the many fables which every day's experience contradicts. Indeed their numbers are so great, and, though shy, they are so often taken, that such peculiarities, if they were possessed of any, would have been long since ascertained. They are found, the porpus especially, in such vast numbers, in all parts of the sea that surrounds this kingdom, that they are sometimes noxious to seamen, when they sail in small vessels. In some places they almost darken the water as they rise to take breath, and particularly before bad weather, are much agitated, swimming against the wind, and tumbling about with unusual violence.

Whether these motions of the Dolphin are the gambols of pleasure, or the agitations of terror, is not certainly known. Probably they dread those seasons of turbulence, when the lesser fishes shrink to the bottom, and their prey no longer present themselves in sufficient abundance. When the weather is fair, they are seen herding together, and pursuing shoals of various fish with great impetuosity. Their method of hunting their game, is to follow in a pack, and thus give each other mutual assistance. At that season, when the mackerel, the herring, the salmon, and other fish of passage, begin to make

their appearance, the cetaceous tribes are seen fierce in the pursuit; urging their prey from one creek or bay to another, deterring them from the shallows, driving them towards each other's ambush, and using a greater variety of arts than hounds are seen to exert in pursuing the hare. However, the porpus not only seeks for prey near the surface, but often descends to the bottom in search of sand-eels and sea-worms, which it roots out of the sand with its nose, as hogs harrow up the fields for food. For this purpose the nose projects a little, is shorter and stronger than that of the Dolphin; and the neck is furnished with very strong muscles, which enable it the readier to turn up the sand.

Sometimes indeed it happens, that the impetuosity, or the hunger, of these animals, in their usual pursuits, urges them beyond the limits of safety. The fishermen, who extend their long nets for pilchards, on the coasts of Cornwall, have sometimes an unwelcome capture in one of these. Their feeble nets, which are calculated only for taking smaller prey, suffer an universal laceration, from the efforts of this strong animal to escape; and if it be not knocked on the head, before it has had time to flounder, the nets are destroyed, and the fishery interrupted. There is nothing, therefore, they so much dread, as the entangling a porpus; and they do every thing to intimidate the animal from approaching.

These animals are so violent in the pursuit of their prey, that they sometimes follow a shoal of small fishes up a fresh-water river, from whence they find it difficult to return. We have often seen them taken in the Thames at London, both above the bridges and below them. It is curious enough to observe with what activity they avoid their pursuers, and what little time they require to fetch breath above the water. The manner of killing them is for four or five boats to spread over the part of the river in which they are seen, and with fire-arms to shoot at them the instant they rise above the water. The fish being thus for some time kept in agitation, requires to come to the surface at quicker intervals, and thus affords the marksmen more frequent opportunities.

The porpus yields a very large quantity of oil; and the lean of some, particularly if the animal be young, is said to be as well tasted as veal. The inhabitants of Norway prepare, from the eggs found in the body of this fish, a kind of caviare, which is said to be very delicate sauce, or good when even eaten with bread. There is a fishery for porpus along the western isles of Scotland during the summer season, when they abound on that shore; and this branch of industry turns to good advantage.

We are told that these animals go with young ten months; that, like the whale, they seldom bring forth above one at a time, and that in the midst of summer: that they live to a considerable age; and that they sleep with the snout above water. They seem to possess, in a degree proportioned to their bulk, the manners of whales; and the history of one species of cetaceous animals will, in a great measure, serve for all the rest.

The parts of the Dolphin, appropriated to medicinal uses, are the liver, the ashes, the belly, and the fat. The belly dried, triturated, and exhibited in some proper liquor, is said to cure splenetic patients. It is said, that the liver roasted, and used with aliments, perfectly cures tertian and quartan fevers; as also that species of nocturnal fever known by the name of typhus. The ashes are, by Pliny, enumerated among the medicines which cure the ring-worm and leprosy. According to the same author, the fat melted, and drank with wine, cures dropical patients.



## C H A P. II.

NATURAL HISTORY of FISHES of the CARTILAGINOUS KIND, viz. *the LAMPREY, the PRIDE, the SKATE, the RAY, the TORPEDO, the THORNBAC, the STING-RAY, the ANGEL-FISH, the DOG-FISH, the FROG-FISH, the SHARK, the SEA-FOX, the TOPE, the SAW-FISH, the STURGEON, the SUN-FISH, the LUMP-FISH, the SEA-SNAIL, and the PIKE-FISH.*

## OF CARTILAGINOUS FISH.

**A**LL those Fishes, whose muscles are supported by cartilages instead of bones, are called Cartilaginous. Many of the Cartilaginous Fish are viviparous, being excluded from an egg which is hatched within them. The egg consists of a white and a yolk, and is lodged in a case, formed of a thick tough substance, resembling softened horn: such are the eggs of the ray and shark kinds. Some indeed differ in this respect, and are oviparous: such is the sturgeon and others.

Like the ray, some of them breathe through certain apertures beneath; like the shark, others breathe through apertures on their sides; or, like the pike-fish, others breathe through an aperture on the top of the head, for they have not covers to their gills like the bony Fish. Fishes of the Cartilaginous kinds have their bones always soft and yielding; and age, which hardens the bones of other animals, contributes still more to soften theirs. The size of all Fishes increases with their age; but from the pliancy of the bones in this tribe, they seem to have no bounds placed to their dimensions: it is indeed supposed, that they grow larger every day that they exist. They usually choose colder seasons and situations than other Fish for propagating their kind; and many of them bring forth in the midst of winter.

## NATURAL HISTORY of the LAMPREY.

**L**AMPREYS are sea-fish, but, like the salmon, they quit the salt waters about the latter end of the winter, or the beginning of spring; and, after a stay of a few months, return again to the ocean, a very few excepted. Though the Severn is the most noted for them, they are found at certain seasons of the year not only in several of our rivers, but in the most considerable of the Scotch and Irish rivers. They are the most in season in the months of March, April, and May; for they are much firmer when just arrived out of the salt water, than they are afterwards; it having been observed, that they appear wasted and very flabby, at the approach of hot weather.

It has been an ancient custom, for the city of Gloucester to present annually to his majesty a Lamprey pye, covered with a large raised crust. As this present is made at Christmas, the corporation find it extremely difficult at that time to procure any fresh Lampreys, it being so early in the season; and sometimes they have been known to purchase them at a guinea a-piece.

Lampreys are sometimes found that weigh four or five pounds: when either potted or stewed, they are reckoned a great delicacy; but they are a surfeiting food, as one of our monarchs fatally experienced; the death of Henry the First being occasioned by a plentiful meal of Lampreys.

The mouth of this fish is round, and placed rather obliquely below the end of the nose: the edges are jagged, which enables them to adhere more strongly to the stones, as their custom is; and from which they are not to be drawn off without some difficulty. There are twenty rows of single teeth

placed in the mouth of this animal, disposed in circular orders, and placed far within. The colour of the fish is dusky, marked with irregular spots of dirty yellow, which gives it a disagreeable appearance.

There is a species called the lesser Lamprey, which grows to the length of about ten inches. The colour of the back is dusky, sometimes mixed with blue; and the whole under side is silvery. They are found in the Thames, Severn, and Dee; and, when potted, are by some preferred to the larger kind. Great numbers are taken about Mortlake.

## NATURAL HISTORY of the PRIDE.

**T**HESE are frequent in the rivers near Oxford, particularly the Isis; but they are to be found in other English rivers; where, instead of concealing themselves under the stones, they plunge into the mud, and never are seen to adhere to any thing like other Lampreys. The body is marked with several transverse lines, passing the sides from the back to the bottom of the belly. The back fin is not angular, like that of the former, but of an equal breadth. The tail is sharp at the end.

## NATURAL HISTORY of the SKATE.

**I**N proportion to its bulk, the Skate is the thinnest of any of the genus, and also the largest, some weighing near an hundred pounds. The nose is short, and sharp-pointed; it has a set of short spines above the eyes: the whole of the upper part is of a pale brown, and sometimes streaked with black: the lower part is white, marked with numerous minute black spots: the jaws are covered with small granulated, but sharp pointed teeth. The tail, which is of a moderate length, has two fins near the end of it. One row of spines passes along the top of it, and a few others are irregularly dispersed on the edges. It is remarked, that in the males of this species the fins are full of spines.

Skates generate in March and April, at which time they swim near the surface of the water, several of the males pursuing one female. The females cast the bags in which the young are included, from May to September. They are exceedingly poor and thin in October, but they begin to improve in November, and grow gradually better till May, at which time they are in the highest perfection.

All fishes of this kind are ranker when first taken, than when they have been kept for two or three days.

## NATURAL HISTORY of the SHARP-NOSED RAY.

**T**HE nose of this fish is very long, narrow, and sharp-pointed, resembling the end of a spontoon. The body is smooth and thin, in proportion to the size. The upper-part is ash-coloured, spotted with numbers of white spots, and a few black ones: the lower part is entirely white: the tail is thick,



thick, with two small fins towards the end. The mouth is large, and furnished with numerous small sharp teeth, bending inwards. On each side of the tail is a row of small spines, and another row runs up the middle.

Mr. Ray mentions the fondness of this Ray for human flesh, and the method it takes of destroying men, by overlaying them, and keeping them down by its vast weight, till they are drowned. *Phile* gives nearly the same account of them; and we cannot refuse giving them credit, since *Ulloa* gives exactly the same account of a fish found in the South Seas, which is the terror of those employed in the pearl fishery. It is said to surround, or wrap up, the unhappy divers till they are suffocated; to guard against which, the negroes never plunge into the water without a sharp knife to defend themselves against the assaults of this formidable enemy.

One of this species was taken in the streight that divides Anglesea from Caernarvonshire in 1768, which was near seven feet in length, and five feet two inches in breadth. It made a most remarkable snorting noise, when it was first brought on shore.

#### The ROUGH RAY.

The Rough Ray derives its Latin name from the instruments used by fullers in smoothing cloth, the back being rough, with small spines resembling those instruments. These spines are spread over the head, and the upper part of the fins, as well as over the back: near the eye is a semi circular order of large spines, and about the nose are a few others; a row of the same kind extends half way down the back; and the tail is armed with a double row of still greater spines. The upper part is a mixture of ash-colour and yellow, and the lower part of the body is entirely white.

The Rough Ray inflicts but slight wounds with the prickles with which almost its whole body is covered. It appears harmless to the ignorant, and any one would, at first sight, venture to take it in his hand, without any apprehensions; but the adventurer would soon find, that there is not a single part of its body that is not armed with spines; and that there is no method of seizing the animal, but by the little fin at the end of the tail.

#### NATURAL HISTORY of the CRAMP-RAY, or TORPEDO.

THE Torpedo is a well-known formidable animal: the narcotic, or numbing quality of this fish, has been taken notice of in all ages. The body of this fish is almost circular, and thicker than others of the ray kind. The skin is soft, smooth, and of a yellowish colour, marked with large annular spots like the rest of the kind; the eyes are very small; the tail tapering to a point; and the weight of the fish from five to fifteen pounds. From its outward appearance, no person would suppose it to be furnished with any extraordinary powers; it has no muscles that seem culculated for any great exertions; no internal conformation essentially differing from the rest of its kind; yet such is that unaccountable power it possesses, that, when alive, it instantly deprives the person who touches it of the use of his arm, and even affects him if he touches it with a stick. *Oppia* says it will benumb the astonished fisherman, even through the whole length of line and rod.

The hook'd Torpedo ne'er forgets its art,  
But soon as struck begins to play its part,  
And to the line applies its magic sides;  
Without delay the subtle power glides  
Along the pliant rod, and slender hairs,

Then to fisher's hand as swift repairs:  
Amaz'd he stands; his arms of sense bereft,  
Down drops the idle rod; his prey is left:  
Not less benumb'd than if he'd felt the whole  
Of frost's severest rage beneath the arctic pole.

The shock given by the Torpedo resembles the stroke of an electrical machine. *Kempfer* gives us the following account of it. "The instant," says he, "I touched it with my hand, I felt a terrible numbness in my arm, and as far up as my shoulder. Even if one treads upon it with the shoe on, it affects not only the leg, but the whole thigh upwards. Those who touch it with the foot, are seized with a stronger palpitation than even those who touch it with the hand. This numbness bears no resemblance to that which we feel when a nerve is a long time pressed, and the foot is said to be asleep; it rather appears like a sudden vapour, which, passing through the pores in an instant, penetrates to the very springs of life, from whence it diffuses itself over the whole body, and gives real pain. The nerves are so affected, that the person struck imagines all the bones of his body, and particularly those of the limb that received the blow, are driven out of joint. All this is accompanied with an universal tremor, a sickness of the stomach, a general convulsion, and a total suspension of the faculties of the mind. In short, such is the pain, that all the force of our promises and authority, could not prevail upon a seaman to undergo the shock a second time. A negroe, indeed, that was standing by, readily undertook to touch the Torpedo; and was seen to handle it without feeling any of its effects. He informed us, that his whole secret consisted in keeping his breath; and we found, upon trial, that this method answered with ourselves. When we held in our breath, the Torpedo was harmless, but when we breathed ever so little, its efficacy took place."

Though *Kempfer* has given a good description of the effects of this animal's shock, yet succeeding experience has convinced us, that holding the breath will not preserve us from its violence; tho' the fish may be sometimes touched with perfect security.

Great as the powers of this fish are when in vigour, they are impaired as it declines in strength, and totally cease when it expires. No noxious qualities are imputed to it as a food, for they are frequently eat by the French, who find them more frequently on their coasts, than we do on ours.

There is a double use in this strange power the Torpedo is endued with: it is exerted as a means of defence against voracious fish, which are at a touch deprived of all possibility of seizing their prey; and by concealing itself in the mud, and benumbing the fish that are carelessly swimming about, it makes a ready prey of them.

The Torpedo inhabits hot or warm climates, and is rarely taken in the British seas.

It is generally supposed, that the female Torpedo is much more powerful than the male. *Lorenzini*, who has made several experiments upon this animal, is of opinion, that its power wholly resides in two thin muscles that cover a part of the back. These he calls the trembling fibres; and he seems convinced, that the animal may be touched with safety in any other part. It is now generally known, that there are other fish of the ray kind, possessed of the numbing quality, which has acquired them the name of the Torpedo. *Atkins* and *Moore* describe these as shaped like a mackarel, except that the head is considerably larger.

*Condamine* describes a fish possessed of the powers of the Torpedo, of a shape very different from the former, and greatly resembling a lamprey. He also informs us, that if it is touched by the hands,